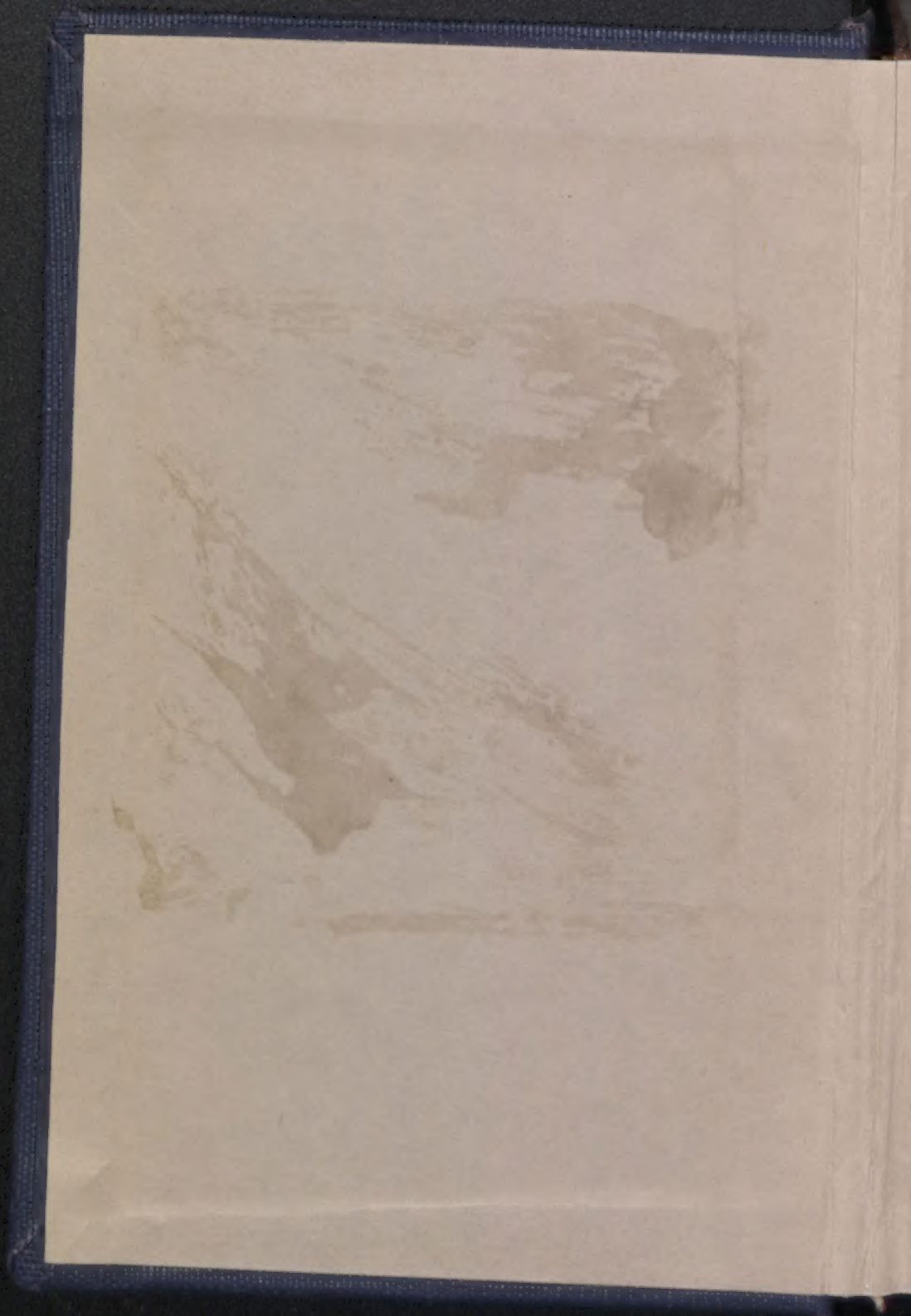
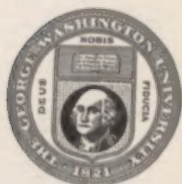


THE
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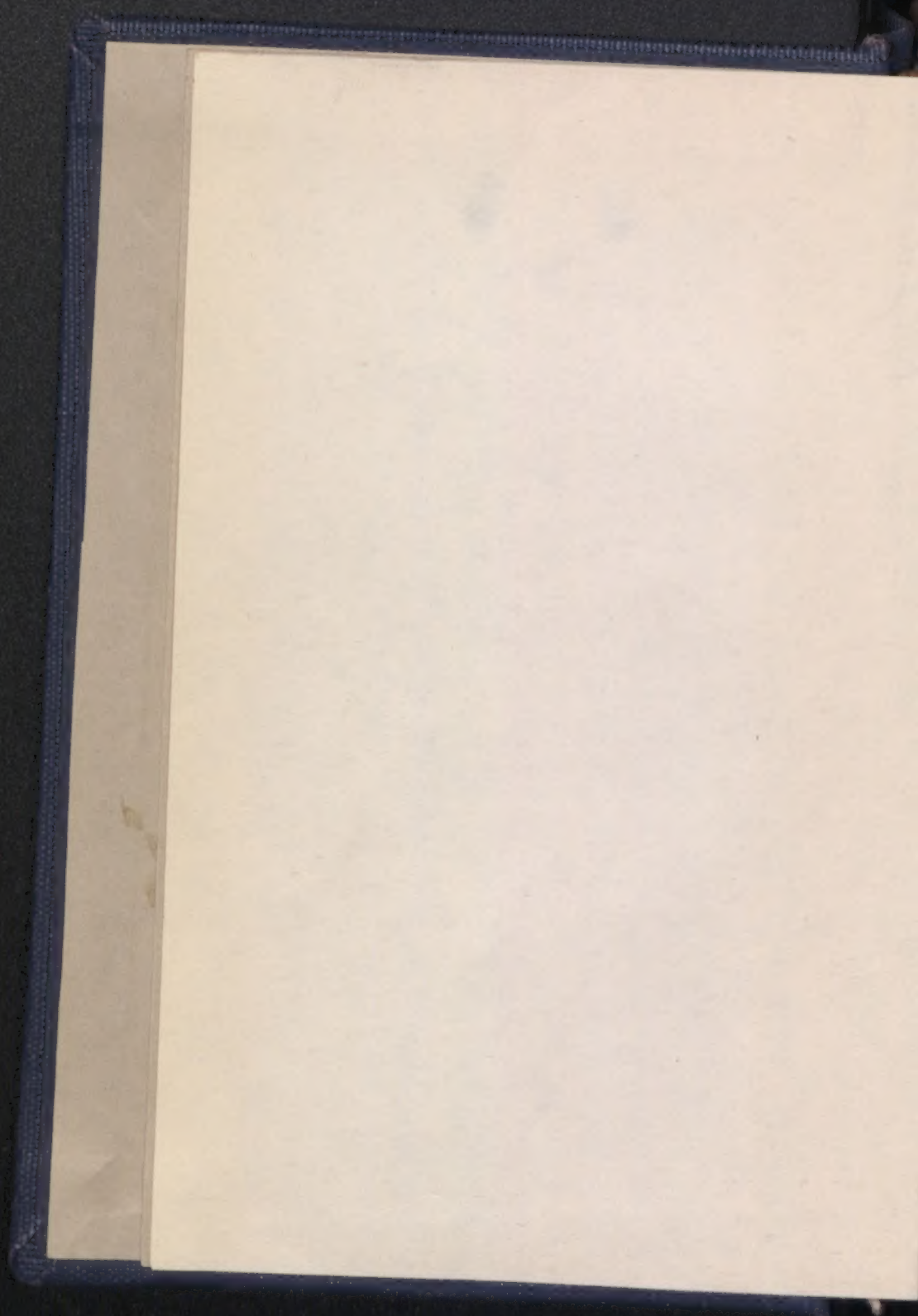
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WASHINGTON, D. C.

PUBLISHED IN JANUARY
NEW LIST

BY THE UNIVERSITY

THE SUMMER SESSIONS

1921

THE
GEORGE
WASHINGTON
UNIVERSITY
BULLETIN

VOL. LII

No. 1

THE SUMMER SESSIONS

WASHINGTON, D. C.

PUBLISHED IN JANUARY
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BY THE UNIVERSITY

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WASHINGTON
UNIVERSITY
BULLETIN

Vol. 1

No. 1

THE SUMMER SESSIONS

WASHINGTON, D. C.

PUBLISHED IN JANUARY

NUMBER

BY THE UNIVERSITY

CALENDAR OF THE SUMMER SESSIONS

1953

Date	Day	Occasion
June 22	Monday	Registration for the eight-week term*
June 23	Tuesday	Classes begin
Aug. 15	Saturday	Foreign-language examinations for candidates for the Master's degrees
Aug. 17	Monday	Eight-week term ends
		Last day for receiving theses for the Master's degrees and for the professional degrees in Engineering to be conferred in November
Sept. 11	Friday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy and Doctor of Education to be conferred in November

THE LAW SCHOOL

June 8	Monday	Registration for the first session
June 10	Wednesday	Classes begin
July 17	Friday	Last day of classes for the first session
July 20-21 ...	Monday and Tuesday	First-session examination period
July 22	Wednesday	Registration for the second session
July 23	Thursday	Classes begin
Aug. 31	Monday	Last day of classes
Sept. 2-3	Wednesday and Thursday	Second-session examination period

THE SCHOOL OF EDUCATION SPECIAL SESSIONS

June 15	Monday	Registration and first day of classes of the pre-session
July 3	Friday	Pre-session ends
July 6	Monday	Registration and first day of classes of the special six-week session
Aug. 14	Friday	Special six-week session ends
Aug. 17	Monday	Registration and first day of classes of the post-session
Sept. 4	Friday	Post-session ends

Registration for the academic year 1953-54 will be held September 23, 24, and 25.

* For all schools and colleges offering courses in the Summer Term except the Law School and the School of Education.

THE UNIVERSITY

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The Board of Trustees of the University is composed of the President of the University ex officio and the following persons by election:

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John Francis Latimer, Ph.D., *Assistant Dean of the College of General
Studies*

THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

Columbian College in the District of Columbia was chartered by an act of Congress of February 9, 1821. In 1873 the name was changed to "Columbian University" and in 1904 to "The George Washington University".

The George Washington University includes fourteen colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences; two years of pre-professional work; and two-year terminal courses. Each of these curricula leads to the degree of Associate in Arts.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. It also offers the studies leading to the degrees of Master of Arts and Master of Science in the fields of the liberal arts and sciences.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers curricula leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law (for foreign students wishing (1) to return to their own countries or (2) to remain in this country for the practice of law), and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering. It also directs work leading to the professional degrees in the fields of civil, electrical, and mechanical engineering.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Accounting, Business Administration, and Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work is offered leading to the degrees of (1) Master of Arts in Government with a major field in Foreign Affairs, Economic Policy, Accounting, Business and Economic Statistics, or Vocational Counseling (2) Master of Arts in Public Administration with a major in General Administration or Governmental Fiscal Administration; (3) Master of Arts in Personnel Administration; (4) Master of Business Administration; (5) Doctor of Business Administration.

The College of General Studies includes the following divisions: the Off-Campus Division, the Campus Division, and the Division of Community Services. The college is designed for adults, and sponsors a program of credit and non-credit courses throughout the year.

The Division of University Students makes available courses for mature students not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Division of Air Science offers a program of Air Force ROTC training which is integrated with the curricula of the colleges and schools of the University and leads to appointment as a commissioned officer in the United States Air Force Reserve.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final approved list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Col-

leges, and is one of the medical colleges which have been continuously approved by the American Medical Association. The School of Pharmacy is accredited by the American Council on Pharmaceutical Education and is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of the Engineers' Council for Professional Development.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor; as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

EDUCATIONAL FACILITIES

Buildings, grounds, and equipment of the University are valued at over \$18,000,000. The buildings of the colleges, schools, and divisions offering Summer Sessions work are in the vicinity of Twenty-first and G Streets, NW.

The University Library.—The University Library contains 250,000 volumes, and with the exception of the law and medical collections is housed in the Library Building.

Regulations governing the use of the library, the circulation of books, and the use of reserve books and periodicals are available at the service desks of the Library.

OTHER LIBRARY FACILITIES IN WASHINGTON

The student has access also to the Library of Congress, the Public Library of the District of Columbia and its branches, the Library of the Pan American Union, the Library of the Bureau of Railway Economics, the Library of the United States Department of Agriculture, the Library of the United States Office of Education, the Army Medical Library, the Library of the Smithsonian Institution, and many other great special collections of the government departments.

RESEARCH FACILITIES OF WASHINGTON

The arrangement of the summer schedule of classes permits the full-time student to avail himself of the opportunity to study, at first hand, the working of the Federal Government and so to form a background for intelligent and useful citizenship.

In the departmental libraries of the Federal Government are a multitude of reports made by eminent specialists in all fields of science on the results of study and research in the bureaus, experimental stations, laboratories, museums, and observatories of the Nation.

In addition to the governmental collection the student has access to the research facilities of such scientific and educational groups, whose headquarters are situated in Washington, as the Carnegie Institution, the American Council on Education, the American Council of Learned Societies, the National Academy of Sciences, the National Research Council, the National Education Association, and the National Geographic Society.

THE SUMMER SESSIONS

1953

STAFF OF INSTRUCTION IN THE SUMMER SESSIONS

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 Mary Ellen Coleman, A.M., *Lecturer in Education*
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 Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
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 William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
 Harold Loran Geisert, Ph.D., *Professor of Sociology*

- Francis Reddy Grady, M.S., *Lecturer in Sociology*
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Ralph Windsor Ruffner, A.M., Ed.D., *Associate Professor of Education*

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THE SUMMER SESSIONS

The work of the Summer Sessions has been planned to meet the needs of full- and part-time students.

During the summer of 1953, courses are offered in the Junior College, Columbian College (the senior college), the Law School, the School of Education, the School of Government, and the Division of Air Science.

ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$3. A recent photograph, with signature, of the applicant must be attached to the blank.

ENTRANCE REQUIREMENTS

The Student Seeking a Degree

An applicant from a secondary school must send the high school record form furnished by the University to his high school principal, with the request that the principal fill out the form and mail it direct to the Office of the Director of Admissions.

An applicant who has previously attended an institution of higher learning should request the registrar of that institution to mail direct to the Office of the Director of Admissions a transcript of his record. If he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admissions a transcript of his record, *even though credits were not earned*, together with an honorable dismissal.

Entrance requirements are stated in this bulletin under the various colleges, schools, and divisions.

The Student Not Seeking a Degree

Students 21 years of age or over who are not interested in working for a degree in this University may be considered for admission to the Division of University Students to take courses for which they have adequate preparation, as evidenced by previous scholastic records.

In special instances, with the permission of the instructor, a person who has been admitted to the University may be registered as an auditor in a class without being required to take active part in the exercises or to pass examinations, but no academic credit will be allowed for such

attendance. Students in good standing and matriculated for degrees in other institutions who wish to take certain courses in this University will be admitted to the Division of University Students for the summer only, to the extent that the facilities permit. In such cases transcripts of record are not required.

REGISTRATION

Before a student may register he must have satisfied the Office of Admissions that he is qualified to enter the University.

A student previously matriculated in the University but not in attendance during the term preceding this registration must file an application for readmission in advance of registration.

For registration students should report to the Office of the Registrar,* Building C, 2029 G Street NW., between 9:00 A.M. and 7:00 P.M., on the dates stated in the Calendar.

CHANGES IN PROGRAM OF STUDY

Changes in programs of study may be made only with the permission of the adviser or major professor and the dean or director of the college, school, or division concerned.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted:

TUITION FEES

For each credit hour for which the student registers except work in the Law School and work taken by a candidate for a Doctor's degree†	\$14.00
For each credit hour for which the student registers in the Law School	16.00
For the degree of Doctor of Philosophy:	
For work leading to and including the Council Fellowship examination§	420.00
For work leading to and including the final examination§	420.00

* Registration for the Law School is conducted in Stockton Hall, 720 Twentieth Street, NW.

† Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the second academic year, it must be registered for again, and tuition paid on the same basis as for a repeated course.

§ When a limited schedule is carried which extends the time of either the preparation period or the examination period to more than one year, the proportionate part of the charge may be fixed by the Comptroller.

For the degree of doctor of Education:

For work leading to and including the general examination*..... 420.00

For work leading to and including the final examination*..... 420.00

For the degree of Doctor of Juridical Science:

For work leading to and including the final examination*..... 420.00

For the degree of Doctor of Business Administration:

For work leading to and including the general examination*..... 420.00

For work leading to and including the final examination*..... 420.00

ADDITIONAL COURSE FEES

In certain courses additional fees such as laboratory and material fees are charged as indicated in the course descriptions. These fees are due with the tuition fee for the course. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee, the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEES

Wherein the degree of Associate in Arts is granted..... 10.00

Wherein a degree other than the Associate in Arts degree is granted 20.00

FEE FOR BINDING MASTER'S THESIS..... 5.00

SPECIAL FEES

Application fee, charged each applicant for admission, non-refundable 3.00

Scholastic-aptitude test fee (when required for admission)..... 3.00

Late registration fee, charged each student who fails to register within the designated period 5.00

Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration..... 5.00

Service fee, charged each student for late payment of tuition (see "Payment of Fees")..... 1.00

Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees..... 5.00

For each examination to qualify for advanced standing and for each special examination 5.00

Laboratory checkout fee, charged each student in chemistry and pharmacy courses who fails to check out of the laboratory by the time set by the instructor..... 2.00

Transcript fee, charged for each transcript of record after the first... 1.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement office; (3) the use of the University library facilities, except as otherwise designated; (4) medical attention and hospital services described below. These privileges, with the exception of the issuance of transcripts, cease when the student withdraws or is dismissed from the University.

Medical and Hospital Services.—These services include: (1) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical opera-

* When a limited schedule is carried which extends the time of either the preparation period or the examination period to more than one year, the proportionate part of the charge may be fixed by the Comptroller.

tion, laboratory, or X-ray examinations; (2) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each session are due in advance at the time of registration.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Registrations are for the session, and no refunds or rebates are allowed, unless the registration is in advance and the course is dropped before the day of registration for the session involved.

A student who preregisters and withdraws prior to the date of regular registration will be charged a withdrawal fee of \$5.

In no case will any part of the initial payment of tuition be refunded because of nonattendance upon classes.

Payments apply only to the session for which registration charges are incurred, and in no case will these payments be credited to another session or term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a laboratory check-out fee of \$2. A student dropping a course before the end of the session must check out of the laboratory at the next scheduled laboratory period.

No permission to withdraw and no certificate for work done will be given a student who has not a clear financial record.

UNIVERSITY REGULATIONS

Students in the Summer Sessions are subject to, and are expected to familiarize themselves with, the University regulations as stated in the general catalogue.

Academic Credit.—The Summer Sessions are an integral part of the University. Academic credit for completed work will be given toward the appropriate degrees in the various colleges and schools of the University in accordance with their separate regulations and requirements.

Residence.—Summer Sessions work may be counted in residence but the candidate for a degree must satisfy the residence requirements of the school or college concerned as stated in the general catalogue.

Amount of Work.—No full-time student may take more than nine credit hours of work during the eight-week session; no employed student, more than six hours.

In the Law School the maximum amount of work that may be taken in both sessions by a full-time student is sixteen credit hours; by an employed student, ten credit hours.

The right is reserved to drop any student whenever, in the interest of the student or the University, the Faculty deems it advisable to do so.

The University is not responsible for the loss of personal property belonging to a student.

The University and its various colleges, schools, and divisions reserve the right to modify or change the requirements, rules, and fees of the University. Such regulations shall go into force whenever the proper authorities may determine and shall apply to every student of the University.

Detailed information concerning curricula; courses offered; admission; scholarship requirements of the individual colleges, schools, and divisions; and requirements for degrees may be obtained from the general catalogue, which is available on request at the Office of the Director of Admissions.

VETERANS EDUCATION

Veterans who wish advice concerning the educational program of the University or the procedure for securing the educational benefits of the GI Bill should consult the Veterans Office, Building Q.

Attention is invited to the provision of law which prescribes that courses under the GI Bill must be "initiated not later than four years after either the date of his discharge or the termination of the present war, whichever is the later". For most veterans this means that the course must have been initiated by July 24, 1951.

AUTHORIZATION FROM THE VETERANS ADMINISTRATION

At least thirty days prior to registration the veteran should obtain from the Regional Office of the Veterans Administration, 1825 H Street NW., a Certificate of Entitlement or, if entitled to vocational rehabili-

tation, a letter approving training under Public Law 16 for presentation to the Veterans Office of the University at the time of registration. A photostatic copy of separation papers must accompany the application for certification. Veterans who have attended another institution under the GI Bill must obtain a Supplemental Certificate of Eligibility to present to this University.

Veterans already enrolled in the University are requested to consult the Office of Veterans Education prior to making any changes in their academic programs, because of changes in Veterans Administration regulations concerning Supplemental Certification.

ADMISSION

For veterans who are deficient in their regular requirements for admission, but who have been found by educational and psychological tests to be able to undertake college work, the University has made certain modifications in the entrance requirements.

Advanced Standing.—To receive credit for service schools, veterans should submit to the Director of Admissions photostatic copies of service records indicating courses successfully completed with sufficient identification of the course to enable the Admissions Office to locate it in the Guide to the Evaluation of Educational Experience in the Armed Forces.

STUDENT LIFE

SOCIAL AND RECREATIONAL PROGRAM OF THE UNIVERSITY

The summer social and recreational program includes regularly scheduled social, square, and folk dances on Lisner Terrace. For those who would like instruction and practice in dance, teaching sessions are provided. Get-acquainted teas and a carnival are also included in the program.

During the summer notices of the many recreational and social opportunities offered in the Capital will be posted on a bulletin board in the Student Union.

LIVING ACCOMMODATIONS

Women Students.—The Hattie M. Strong Residence Hall provides single rooms at \$35 a month and double rooms at \$30 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Girls under the age of twenty-one who are enrolled for six or more credit hours of academic work in the University and who are not living with their parents or relatives may live outside the dormitory only with

the permission and approval of the Director of Activities for Women, upon receipt of written requests from parents. In no case will permission be granted for such girls to live in apartments, except with persons approved by the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Single and double rooms are provided in Draper Hall, a temporary dormitory. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students and their families. Meals are served at the Student Union. Application forms for room reservation may be obtained from the Director of Activities for Men, Building R, 2027 H Street NW.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, 814 Twenty-second Street NW. The reservation of rooms in private houses must be made by students.

THE COLLEGES, SCHOOLS, AND DIVISIONS

THE COLLEGES, SCHOOLS, AND DIVISIONS

Information concerning specific requirements for degrees is omitted from this bulletin. For such information, the student is referred to the general catalogue.

THE JUNIOR COLLEGE

The Junior College includes the first two years of college work. Its curricula are intended to continue the studies of a general cultural nature begun in secondary school, and to lay a foundation for the more specialized work which is to follow.

The Junior College also provides the preprofessional work required for admission to the schools of Pharmacy, Education, and Government, and the first two years of the preprofessional work required for admission to the schools of Medicine and Law.

In addition it provides a two-year terminal curriculum in Secretarial Studies and a two-year terminal curriculum in Accounting for students who wish strictly vocational training in these subjects.

THE DEGREE OF ASSOCIATE IN ARTS

The Junior College offers work leading to the degree of Associate in Arts.

ENTRANCE REQUIREMENTS

An acceptable certificate of graduation from an accredited secondary school is required. The acceptability of the certificate depends upon the student's character and the quality of his work.

COLUMBIAN COLLEGE

Columbian College, the senior college of liberal arts and sciences, comprises the work of the junior and senior years and the Master of Arts and Master of Science disciplines.

THE DEGREES

Columbian College offers work leading to the following degrees: Bachelor of Arts, Bachelor of Science, Master of Arts, and Master of Science. In cooperation with the School of Medicine, Columbian College offers work leading to the combined degrees of Bachelor of Arts and Doctor of Medicine.

UNDERGRADUATE MAJORS

Curricula leading to the degree of Bachelor of Arts are available in the following major fields:

American Thought and Civilization	Latin American Civilization and Culture
Art:	Mathematics
Appreciation	Philosophy
Drawing and Painting	Physics
Biology	Political Science
Botany	Psychology
Chemistry	Religion
Economics	Sociology
English Literature	Spanish American Literature
French Literature	Spanish Literature
Geography	Speech
Germanic Languages and Literatures	Statistics
History	Zoology
Journalism:	
News-Editorial	
Public Relations	

Curricula leading to the degree of Bachelor of Science are available in the following major fields:

Biology	Physics
Botany	Statistics
Chemistry	Zoology
Mathematics	

GRADUATE FIELDS

Graduate work leading to the degree of Master of Arts or Master of Science is offered in the following fields:

American Literary and Cultural	History
History	Latin American Civilization and Culture
Anatomy	Mathematics
Bacteriology	Pharmacology
Biochemistry	Philosophy
Biology	Physics
Botany	Physiology
Chemistry	Political Science
Economics	Psychology
English and American Literature	Sociology
English Literature	Spanish American Literature
French Literature	Spanish Literature
Geography	Statistics
Germanic Languages and Literatures	Zoology

In addition, programs can be arranged in combined fields subject to the approval of the division or divisions concerned.

ENTRANCE REQUIREMENTS

For the Bachelor's degrees, the degree of Associate in Arts based on the appropriate curriculum in the Junior College, or the equivalent, is required. Scholarship requirements may be somewhat higher than those for graduation from the Junior College. For the Master's degrees, an approved Bachelor's degree from an accredited institution and a transcript of studies previously pursued, showing appropriate distribution of courses and a superior quality of work in the major field, are required.

THE GRADUATE COUNCIL

The Graduate Council offers work leading only to the degree of Doctor of Philosophy. Because the basis for work under the Graduate Council is primarily creative research, regular study in specific courses is considered quite incidental and is therefore not emphasized in connection with the curricula of the Summer Sessions. A student wishing to work under the disciplines of the Graduate Council will consult the Chairman of the Graduate Council for information concerning credentials and candidacy.

A pamphlet describing details of the Graduate Council program, together with a current list of fields of research offered by the Council, will be sent upon request to the Office of the Graduate Council.

THE LAW SCHOOL

The Law School offers work leading to the following degrees: Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

ENTRANCE REQUIREMENTS

For the Degree of Bachelor of Laws.—A Bachelor's degree awarded upon completion of a four-year course in an approved college or university is required. All pre-legal work must be of a satisfactory quality and distribution. No student will be admitted who has been in attendance at another law school and who is ineligible to return to that school in good standing. From the applicants, a selection will be made by the Committee on Admissions.

The Juris Doctor degree is conferred as a recognition of completion with high rank of the full course, including experience in research and legal authorship. A student does not register as a candidate for this degree until his last year in the Law School.

For the Degree of Master of Laws.—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from a member school of the Association of Amer-

ican Law Schools are required. Candidates for admission must have attained an average grade on all work done for the Bachelor of Laws degree equivalent to the relative position of a *B* average in the standards of grading at this Law School, except that, in the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative.

For the Degree of Master of Comparative Law.—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters or sciences, equivalent to graduation from a gymnasium, lycee, or lyceo (junior college); and (2) graduation in law from a recognized foreign university where training was in civil law.

For the Degree of Doctor of Juridical Science.—The following are required: (1) the degree of Juris Doctor from this Law School; or (2) the degree of Bachelor of Arts from an approved college, the degree of Bachelor of Laws or the equivalent, earned with high rank, from a member school of the Association of American Law Schools, and outstanding capacity for scholarly work in the field of law.

Unclassified Students.—The following applicants may, at the discretion of the Dean, be admitted as unclassified students:

1. Those who, though eligible, do not desire to be degree candidates.
2. Those who are in good standing as degree candidates in other law schools which are members of the Association of American Law Schools.
3. Those who are not eligible for admission as candidates for degree but are members of the bar.

Unclassified students are required to participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at this Law School.

THE SCHOOL OF EDUCATION

The School of Education prepares teachers, supervisors, and administrators for educational service and offers opportunities to teachers of experience to extend their education. The schedule of courses is arranged to meet the needs of employed students as well as those able to devote full time to their studies. It offers both graduate and undergraduate work.

THE DEGREES

The School of Education offers work leading to the following degrees: Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education, Master of Arts in Education, and Doctor of Education.

ENTRANCE REQUIREMENTS

For the Bachelor's Degrees.—The satisfactory completion of two years of approved college work, or graduation from an approved two-year normal school, or the equivalent, is required.

For the Master's Degree.—A Bachelor's degree from an accredited college, or the equivalent, and the approval of the Committee on Admissions and Advanced Standing are required.

For the Doctor's Degree.—A Master's degree from an accredited college, or the equivalent, and the approval of the Faculty of the School of Education are required.

THE SCHOOL OF GOVERNMENT

THE DEGREES

The School of Government offers work leading to the following degrees: (1) Bachelor of Arts in Government with a major in Foreign Affairs, Statistics, Accounting, and Business Administration; (2) Master of Arts in Government with a major field in Foreign Affairs, Economic Policy, Accounting, Business and Economic Statistics, or Vocational Counseling; (3) Master of Arts in Public Administration with a major in General Administration or Governmental Fiscal Administration; (4) Master of Arts in Personnel Administration; (5) Master of Business Administration; (6) Doctor of Business Administration.

ENTRANCE REQUIREMENTS

For the Bachelor's Degree

Bachelor of Arts in Government.—An Associate in Arts degree based on the *Foreign Affairs, Accounting, Business Administration, or Statistics* curriculum in the Junior College, or the equivalent, and a quality-point index at 2.00 for the first two years' work are required.

For the Master's Degrees

A Bachelor's degree from an accredited college or university is required. A student from an unaccredited institution may be admitted at the discretion of the Dean's Council, but will be required to take such extra work above the minimum requirements as may be prescribed.

Students admitted to candidacy must have attained a quality-point index of 3.00 (a "B" average) in their undergraduate major. Applicants whose scholastic average is below 3.00 in their major, or who lack prerequisite courses, may be referred to the Division of Special Students to make up the deficiency.

Master of Arts in Government.—The applicants' undergraduate program must have included prerequisite courses, corresponding to undergraduate majors at this University, for the chosen field of graduate study.

Master of Arts in Public Administration.—An undergraduate major in a social science field appropriate to the chosen field of advanced work in public administration is required.

Master of Arts in Personnel Administration.—An undergraduate major in a social science or education, with the appropriate courses in psychology is required.

Master of Business Administration.—An acceptable undergraduate major in Business Administration or the equivalent is required. Applicants who are deficient in such course work may be admitted and will be required to make up deficiencies over and above the normal Master of Business Administration program.

For the Degree of Doctor of Business Administration

A Master's degree in Business Administration or a related field, or the equivalent, and proficiency in Statistics and Accounting to the satisfaction of the Committee on Doctoral Studies are required.

FOREIGN SERVICE REVIEW COURSE

The University will offer a ten-week non-credit Review Course in preparation for the written Foreign Service Examination to be given by the Department of State in September 1953. For information and application forms, write to the Director, Foreign Service Review Course, School of Government.

COLLEGE OF GENERAL STUDIES

The College of General Studies offers off-campus credit and non-credit courses in any field in which there is sufficient demand and for which instructional facilities can be made available. These courses will meet at the time and place most convenient for the students enrolled and may begin at any time of the year.

The College also provides a degree-granting division for mature adults whose background and experience is such that they should be matriculated in a division designed to meet their special needs.

The Division of Community Services provides a program of community educational services such as the George Washington University Reading Clinic and the Government Intern Scholarship Program.

ENTRANCE REQUIREMENTS

Off-Campus Credit Courses.—A simplified procedure for admission and registration in off-campus courses is conducted at the first meeting of the class. Transcripts of previous academic work are not required. Registration is restricted to those whose qualifications would indicate that they are able to carry the course successfully. Admission to an off-campus course does not constitute admission to degree candidacy in the University.

Off-Campus Non-Credit Courses.—In general, off-campus non-credit courses will be open to any individual interested in enrolling. When a non-credit course is organized at the request of some particular agency or group, admission may be restricted to the students recommended by the sponsoring organization. A limit on the size of classes may have to be imposed in order to maintain the quality of instruction.

THE DIVISION OF UNIVERSITY STUDENTS

The Division of University Students makes the work of the University, in its several colleges and schools, accessible to students 21 years of age or over who are not working toward a degree in this University.

Candidates for degrees in other colleges and universities attending the Summer Sessions of the University are registered in the Division of University Students.

Adequate preparation to undertake the desired courses is required.

THE DIVISION OF SPECIAL STUDENTS

This is a non degree-granting division of the University in which the Director of Admissions may authorize the placement of students in the process of making up entrance deficiencies to degree-granting colleges and schools of the University.

Complete credentials must be submitted and evaluated before a program of studies is approved.

DIVISION OF AIR SCIENCE

The Division of Air Science offers a four-year course, with a total of twenty elective credits toward a degree. It is available to male freshman students who are taking a full-time course leading to an undergraduate degree. In some instances, graduate students are also eligible. Upon successful completion of this course, the commission of Second Lieutenant in the United States Air Force Reserve will be awarded.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

EXPLANATION OF COURSE NUMBERS

First-group courses.—Courses numbered from 1 to 100, are planned for the student in the freshman or sophomore year. With the approval of the adviser and the dean, they may also be taken by a junior or senior. In certain instances, they may be taken by a graduate student to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200, are planned for the student in the junior or senior year. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300, are planned primarily for the graduate student. They are open, with the approval of the officer of instruction, to the qualified senior; they are not open to the Junior College student.

INDICATION OF THE AMOUNT OF CREDIT

The number of hours of credit given for the satisfactory completion of a course is in most cases indicated in parentheses after the name of the course.

The University reserves the right to change or withdraw any of the courses of instruction listed.

ACCOUNTING

- 1 Introductory Accounting (3)** Kennedy
Basic principles underlying accounting records used by single proprietorships and partnerships; preparation of the work sheet and financial statements. 8:10 A.M.
- 1-2 Introductory Accounting (3-3)** Kurtz
Study of basic principles underlying accounting records used by single proprietorships, partnerships, and corporations; preparation of the work sheet and financial statements; introduction to cost accounting and to valuation and income determination problems. Prerequisite to Accounting 2: Accounting 1 or permission of the instructor. Second half begins July 20. 7:10 to 9:00 P.M.
- 101 Cost Accounting (3)** Kurtz
Study of the theory and purpose of industrial cost accounting; treatment of the systems of cost control and determination; and the analysis and interpretation of cost data. Emphasis will be on job order cost accounting. Prerequisite: Accounting 1-2. 9:10 A.M.
- 111 Financial Statement Analysis (3)** Kennedy
Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors; determination and interpretation of trends and ratios. Prerequisite: Accounting 1-2. Mon. through Thurs., 7:00 to 8:00 A.M.
- 121 Intermediate Accounting (3)** Steele
Problems relating to asset valuation and income determination and the recording of assets and liabilities; the treatment of depreciation, depletion, amortization, funds, and reserves is stressed. Prerequisite: Accounting 1-2. 6:10 P.M.
- 155 Business Budgeting (3)** Buckler
Study of the principles, preparation, and administration of a business budget, with emphasis on the importance of the budget to management. Prerequisite: Accounting 1-2. Tues. and Thurs., 7:10 to 9:25 P.M.
- 231 Contemporary Accounting Theory (3)** Kennedy
An intensive study of advanced accounting principles and concepts and of recent theories in connection with the valuation of assets and the determination of income. Prerequisite: Permission of the instructor. Mon. and Wed., 6:10 to 8:15 P.M.

AIR SCIENCE AND TACTICS

- 51 Air Science II—Sophomore Year (2)** The Staff
Aerial navigation, meteorology, aerodynamics and propulsion. Drill and exercise of command. Prerequisite: Air Science 1-2 or equivalent active military training. Lecture—Mon. through Thurs., 9:10 A.M.; drill—Fri., 8:10 to 10:00 A.M.
- 103 Summer Camp—Junior Year (required)** The Staff
Familiarization flying, individual weapons, USAF Base activities, field

exercises, air base problems, physical training, and leadership laboratory. Six weeks training between junior and senior years at an active USAF base within the United States. Satisfactory completion is prerequisite to Air Science IV (151).

ART

- 71 *Introduction to the Arts in America* (3) Kline
Painting, architecture, and sculpture in America during the Colonial and Republican periods. 5:10 P.M.
- 72 *Introduction to the Arts in America* (3) Kline
Painting, architecture, and sculpture in America during the mid-nineteenth and twentieth centuries. 6:10 P.M.

BIOLOGY

- 1-2 *Survey in Biology* (3-3) Bowman, Munson
A review of the plant and animal kingdoms, with emphasis upon the interdependence of living things and their relations with their environments. Introduction to evolution and heredity, public health, and conservation of natural resources. Material fee, \$5 for each half. Nine-week term. Biology 1 is not prerequisite to Biology 2. Biology 2 begins July 23 and ends August 24. Lectures, laboratories, and field trips. 1:10 to 5:00 P.M.
- 211 *Research in Cytology* (arr.) Bowman
Individual problems for advanced students interested in this field. Hours and credits to be arranged.
- 299 *Thesis* (3) Bowman

BOTANY

- 1 *Structure and Functions of the Flowering Plant* * (3) Cantlon
The typical plant as a working mechanism, with the emphasis on the general biological significance of plant physiology. Material fee, \$5. Lecture and laboratory—Mon., Wed., and Fri., 10:10 to 12:00 A.M. and Tues. and Thurs., 10:10 to 11:00 A.M.
- 2 *Survey of the Plant Kingdom* * (3) Cantlon
Study of the different kinds of plants, with emphasis on the evolution of the plant kingdom; practice in identifying flowering plants. Material fee, \$5. Lecture and laboratory—Mon., Wed., and Fri., 12:10 to 1:00 P.M. and Tues. and Thurs., 11:10 A.M. to 1:00 P.M.
- 295 *Research* (arr.) The Staff
Hours and credits to be arranged.
- 299 *Thesis* (3) The Staff

* Botany 1 is not prerequisite to Botany 2.

BUSINESS ADMINISTRATION

- 101 *Business Organization and Combination* (3) Owens
Simple and interrelated forms of business enterprise and their control by government. 9:10 A.M.
- 105 *Personnel Management in Industry* (3) Owens
Organization and work of the personnel department, human relations in business. 8:10 A.M.
- 109 *Office Management* (3) Johnson
Organization and layout of an office, use of office machines and appliances, planning and execution of work, supervision problems. 6:10 P.M.
- 131 *Business Finance* (3) Welshans
Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2. 10:10 A.M.
- 138 *Investments* (3) Welshans
Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2. Mon. and Wed., 7:10 to 9:25 P.M.
- 141 *Principles of Marketing* (3) Barnewall
A survey of marketing, giving particular attention to consumption, retailing, wholesaling, and sales management; the entire marketing structure and its relation to the total economy. Prerequisite: Economics 1-2. 11:10 A.M.
- 147 *Advertising* (3) Barnewall
Advertising as a function of marketing and merchandising; evaluation, purchase, criticism, and control of advertising; uses and limitations of advertising as a tool of management. Tues. and Thurs., 7:10 to 9:25 P.M.
- 198 *Problems in Business Management* (3) Barnewall
Principles and methods of management illustrated by cases drawn from business and industry. Open to seniors. 6:10 P.M.
- 232 *Seminar in Business Finance* (3) Welshans
Research in advanced financial problems. Tues. and Thurs., 8:10 to 10:00 P.M.
- 291 *Seminar in Business Management* (3) Owens
Research on various phases of management, including business, industrial, and personnel management. Mon. and Wed., 6:10 to 8:00 P.M.
- 296 *Seminar in Controllershship* (3) Jessup
Research on advanced problems of the controller, in all types of business organizations and the Federal Government. Mon. and Wed., 8:10 to 10:00 P.M.
- 299 *Thesis* (3) The Staff

CHEMISTRY

- †11-12 *General Chemistry* (4-4) Wood, Harkness, Perros
Chemistry 11-12 is an elementary course in general chemistry. Prerequisite: one year of high school algebra. Students with credit for one term of general chemistry (college level) may enter Chemistry 12 on July 23. Laboratory fee, \$15 for each half. Nine-week term ending August 24. 8:30 A.M. to 1:20 P.M.
- 21 *Qualitative Inorganic Analysis* (4) Vincent
Theoretical and practical study of methods of separating and identifying the more common cations and anions using semi-micro techniques. Prerequisite: Chemistry 12. Laboratory fee, \$15. Six-week term; 1:10 to 5:00 P.M.
- †151-52 *Organic Chemistry* (4-4) Wrenn, Sager
Chemistry of the compounds of carbon. Credit is not given for Chemistry 151 until Chemistry 152 is completed. Prerequisite: Chemistry 21. Chemistry 151—laboratory fee, \$9; lecture (3), laboratory (1). Chemistry 152—laboratory fee, \$15; lecture 2 credit hours, laboratory 2 credit hours. Students who have credit for Chemistry 151 may enter Chemistry 152 on July 23. Nine-week term ending August 24. 8:30 A.M. to 1:20 P.M.
- 297-98 *Research* (arr.) The Staff
Hours, credit, and fees to be arranged. Open only to qualified students with advanced training.
- 299-300 *Thesis* (3-3) The Staff
Laboratory fee, \$15 a term. Nine-week term. Hours to be arranged.

ECONOMICS *

- 1 *Principles of Economics* * (3) Coogan, _____
Survey of major economic institutions and economic problems in contemporary society. Section A: 9:10 A.M.; section B: 6:10 P.M.
- 2 *Principles of Economics* * (3) Burns, _____
Survey of major economic institutions and economic problems in contemporary society. Section A: 10:10 A.M.; section B: 7:10 P.M.
- 101 *Economic Theory* (3) Watson
Introduction to formal economic theory; advanced analysis of demand and supply relations. 6:10 P.M.
- 109 *Distribution Theory and Welfare Economics* (3) _____
Advanced economic theory, with emphasis on income distribution and the literature on welfare economics. 7:10 P.M.
- 121 *Money and Banking* (3) Coogan
Theory of money, credit, and banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems. 8:10 A.M.

† A dagger preceding an odd-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

* Economics 1-2 is prerequisite to all other courses in Economics.

- 133 *The Economy of the Soviet Union* (3) Coogan
Development and main features of the economic life of the Soviet Union. 11:10 A.M.
- 166 *Comparative Systems of Economic Reform* (3) Watson
Analysis of the major theories of economic and social reform, with special attention to their origins and backgrounds. 5:10 P.M.
- 181 *International Economics* (3) Schmidt
Survey of world economics; theories of international trade; analysis of international economic problems; the international organizations. 10:10 A.M.
- 182 *International Economics* (3)
Continuation of Economics 181. 6:10 P.M.
- 213 *Economic Thought in the Twentieth Century* (3) Burns
The writings of the principal economists since Marshall. Mon. and Wed., 5:10 to 7:00 P.M.
- 215 *Managerial Economics* (3) Watson
Analysis of price, production, and inventory policies of business firms. Mon. and Wed., 7:10 to 9:00 P.M.
- 251 *Theories of Economic Development* (3)
Growth and change in economic activity; capital accumulation; innovations in technology and business organization. Tues. and Thurs., 7:10 to 9:00 P.M.

EDUCATION

PRE-SESSION

June 15 to July 3

- 109 *Learning and Teaching* (3) Ruffner
For the general student as well as the prospective teacher. Nature of learning approached through the study of actual classroom situations. 10:00 to 12:00 A.M.; field work to be arranged.
- 222 *Early Childhood Education* (3) Holliday
Education in the primary grades. 9:00 to 11:00 A.M.; conference hour—11:10 A.M.
- 255 *Secondary Education* (3) Root
Current proposals for the reorganization of secondary education. 9:00 to 11:00 A.M.; conference hour—11:10 A.M.

SPECIAL SIX-WEEK SESSION

First Half—July 6 to July 24

- 110 *Learning and Teaching* (3) Ruffner
For the general student as well as the prospective teacher. Nature of teaching approached through the study of actual classroom situations. 10:00 to 12:00 A.M.; field work to be arranged.

117 Elementary School Science (3)

Content, materials, and methods. 2:10 to 4:00 P.M.; conference hour—4:10 P.M.

231 Secondary School Classroom Procedures (3)

Bish

Survey of current classroom practices with particular attention to teaching aids, review of recent literature. 2:10 to 4:00 P.M.; conference hour—4:10 P.M.

Second Half—July 27 to August 14**121 Society and the School (3)**

Angel

For the general student as well as the prospective teacher. The local, national, and international roles of education; cooperation of the school with other community agencies. 10:00 to 12:00 A.M.; field work to be arranged.

125 Elementary School Reading (3)

Coleman

Developmental and remedial approaches to reading problems. Demonstrations of diagnostic and corrective techniques used in the Reading Clinic. 2:10 to 4:00 P.M.; conference hour—4:10 P.M.

239 Teaching the Core Curriculum (3)

Bish

An examination and study of classroom teaching procedures appropriate to the core program. 2:10 to 4:00 P.M.; conference hour—4:10 P.M.

Full Period—July 6 to August 14**207 Curriculum Materials (3)**

The study and construction of courses of study, resource units, classroom teaching aids, and inexpensive materials; direct application to students' own situations. Mon. and Wed., 6:40 to 9:00 P.M.; conference hour—Mon. and Wed., 6:00 P.M.

217 Contemporary Problems in Education (3)

Jarman

Designed to help students formulate a personal philosophy of education. 9:10 A.M.; conference hours—Tues., 10:20 A.M. and Thurs., 11:30 A.M.

256 Secondary Education (3)

Root

Current problems in each of the subject-matter fields. 11:30 A.M. to 12:30 P.M.; conference hours—Tues., 10:20 A.M. and Thurs., 9:10 A.M.

272 The Teacher and School Supervision (3)

Fox

Nature, organization, human relationships, and techniques. 10:20 to 11:20 A.M.; conference hours—Tues., 9:10 A.M. and Thurs., 2:00 P.M.

279 Adult Education (3)

Ruffner

Current concepts and objectives, agencies involved, programs on all levels—international through community. Tues. and Thurs., 6:40 to 9:00 P.M.; conference hours—Tues. and Thurs., 6:00 P.M.

285 Extra-classroom Activities (1)

Root

Home-room functions, student self-government, clubs, assemblies, school publications. Mon. and Wed., 6:40 to 9:00 P.M.; conference hours—Mon. and Wed., 6:00 P.M.

- 295 *Educational Research Methods and Procedures* (3) Fox
Required of all Master's candidates following Plan 2. 1:00 to 2:00 P.M.; conference hours—Mon. and Wed., 2:10 P.M. and Fri., 9:10 A.M.
- 297 *Reading in Education* The Staff
To assist those preparing for the comprehensive examination. No credit toward degree requirements. Tuition fee, \$14. 4:10 P.M.
- Psychology 227 *Seminar: Counseling and Guidance* (3) Dreese
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies, with particular reference to education. Prerequisite: educational or psychological measurements and Psychology 129 or the equivalent. 10:20 to 11:20 A.M.
- 299-300 *Thesis* (3-3) The Staff

POST-SESSION

August 17 to September 4

- 122 *Society and the School* (3) Angel
For the general student as well as the prospective teacher. Organization and operation of schools; principles and functions. 10:00 to 12:00 A.M.; field work to be arranged.
- 219 *Recent Developments in Elementary Education* (3)
New areas of emphasis, changing techniques of working with children, curriculum trends, review of recent literature. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.
- 243 *Human Relations in the Classroom* (3) Grambs
Principles and practices involving interpersonal relationships between learner and teacher and among learners. 9:10 to 11:00 A.M.; conference hour—11:10 A.M.

ENGLISH *

- A *English Practice* (3) Allee, Rowe
Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. Section A: 9:10 A.M.; section B: 8:10 P.M.
- B *English for Foreign Students* (3) Allee
A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary. 7:10 P.M.

* Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both terms of the Freshman English course; those who are inadequately prepared for English 1 will be assigned to English A.

English 1-2 is prerequisite to all other courses in English.

- 1 *Freshman English* * (3) Moore and Staff
Review of grammar, exercises in composition, readings. Section A: 9:10 A.M.; section B: 11:10 A.M.; section C: 7:10 P.M.
- 2 *Freshman English* * (3) Howard
Continuation of English 1. Section A: 10:10 A.M.; section B: 8:10 P.M.
- 11 *The Writing of Reports* (3) Mowry
Theory and practice in the writing of technical reports. 7:10 P.M.

ENGLISH LITERATURE ‡

- 51 *Introduction to English Literature* (3) Linton
A historical survey. From beginnings to 1800. 9:10 A.M.
- 52 *Introduction to English Literature* (3) Shepard
A historical survey. Literature since 1800. 7:10 P.M.
- 91 *Introduction to European Literature* (3) Shepard
Consideration of various types. 6:10 P.M.
- 136 *Shakespeare* (3) Tupper
The major tragedies. 6:10 P.M.
- 165 *The Twentieth Century* (3) Linton
British poetry since 1900. 10:10 A.M.
- 183 *The English Drama* (3) Tupper
The drama of Shakespeare's contemporaries. 7:10 P.M.
- 251 *Studies in the Romantic Movement* (3) Day
Tues. and Thurs., 8:10 to 10:00 P.M.

AMERICAN LITERATURE ‡

- 71 *Introduction to American Literature* (3) Bolwell
A historical survey. From beginnings to 1860. 10:10 A.M.
- 72 *Introduction to American Literature* (3) Cole
A historical survey. Literature since 1860. 6:10 P.M.
- 175 *American Drama* (3) Cole
Historical and critical study of significant plays and forms, from beginnings to 1920. 9:10 A.M.

GEOGRAPHY

- 51 *Introduction to Geography* (3) Westermann
A study of the attributes of place; patterns and associations of physical and cultural and earth-features; the systematic appraisal of earth-man relationships. 9:10 A.M.

* Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both terms of the Freshman English course; those who are inadequately prepared for English 1 will be assigned to English A. English 1-2 is prerequisite to all other courses in English.

‡ English 51-52, 71-72, or 91-92 is prerequisite to all second-group courses.

- 72 *Political Geography of the United States* (3) Koenig
A consideration of the interplay between geographic and political factors and the extent to which they determine the administrative policies of governments. 10:10 A.M.
- 127 *Industrial Geography* (3) Withington
Location and distribution of significant industries, and analysis of the geographic factors determining both; internal structure and external relationships of specific industries. 7:10 P.M.
- 161 *Geography of Soils* (3) Westermann
The physical nature, development, and world distribution of soils, soils and land use, current and future soil problems. Prerequisite: Geography 51 and 52. 6:10 P.M.
- 185 *Africa* (3) Withington
Physical, political, economic, and regional survey of Africa. 5:10 P.M.
- 299-300 *Thesis* (3-3) The Staff
Hours to be arranged.

GERMANIC LANGUAGES AND LITERATURES

- †1-2 *First-year German* (3-3) Rogers, Sehrt
The essentials of German grammar, translation of easy prose. Second half begins July 20. Section A: 9:10 to 11:00 A.M.; section B: 6:10 to 8:00 P.M.
- †3-4 *Second-year German* (3-3) Legner
Selections from modern German prose, review of grammar. Prerequisite: German 1-2 or two years of high-school German. Second half begins July 20. 6:10 to 8:00 P.M.

HISTORY*

- 39 *The Development of European Civilization to 1648* (3) Kayser
Primarily for freshmen. The political, social, economic, and cultural history of the Old World from ancient times through the Reformation period. 7:00 A.M.
- 40 *The Development of European Civilization since 1648* (3)
Primarily for freshmen. The political, social, economic, and cultural history of the Old World from the Reformation period to the present. 7:10 P.M.

† A dagger preceding an odd-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

* History 39-40 is prerequisite to courses 100 through 162; History 71-72, to courses 163 through 184. History 39 and History 71 will be offered in the fall term.

- 71 *The Development of the Civilization of the United States to 1865* (3) Koenig
Primarily for sophomores. The political, social, economic, and cultural forces of the United States from the period of discovery through the Civil War. 8:00 A.M.
- 72 *The Development of the Civilization of the United States since 1865* (3) Haskett
Primarily for sophomores. The political, social, economic, and cultural forces of the United States in their world setting from 1865 to the present. 6:10 P.M.
- 130 *Nationalism* (3) Kayser
The historical evolution of modern nationalism. 8:00 A.M.
- 147 *Economic History of Europe* (3) Gray
A survey from ancient times to the present day. 6:10 P.M.
- 152 *English History since 1689* (3) Haskett
A general survey of the development of political, social, and economic institutions of lasting significance in the English speaking world since the "Glorious Revolution." 11:10 A.M.
- 166 *Mexico and the Caribbean since Independence* (3) Davis
A survey of the republics of Mexico, Central America, and the Caribbean Islands. 6:10 P.M.
- 173 *Representative Americans* (3) Gray
A biographical approach to national history. Some fifty significant and pivotal personalities in the development of the United States in government, business, science, religion, journalism, the arts, and social reform. 9:10 A.M.
- 174 *Economic History of the United States* (3) Gray
Main trends in the development of American agriculture, industry, and trade since 1607, with emphasis on tendencies and problems since the Civil War. 10:10 A.M.
- 175 *Political and Constitutional History of the United States* (3) Haskett
The programs and conflicts of group interests in America within the legal and political framework to the Civil War. 7:10 P.M.
- 199-200 *Proseminar: the Literature and Method of History* (3-3) The Staff
Limited to majors in History. Hours to be arranged.
- 291-92 *Seminar* (3-3) The Staff
Prerequisite: approval of the Department. Hours to be arranged.
- 299-300 *Thesis* (3-3) The Staff
Required of all candidates for the Master's degree specializing in history. Hours to be arranged.

LAW

FIRST SESSION

- 101 *Legal Method and Legal System* (4) Merrifield
Introduction to study of substantive and procedural law dealing with basic concepts. Training in method and technique of case law, based upon modern records in state and federal cases, followed by practice in the use of law books and legal writing. Importance of language in law, legal reasoning, statutory interpretation, and use of precedents, under the doctrines of stare decisis, law of the case, and res judicata. Background development of Anglo-American legal system; organization of the judiciary and the bar, stressing enforcement of ethical standards. 5:50 to 7:40 P.M.
- 138x *Real Property* (4) Jones
Historical background of estates and conveyances; possessory estates; concurrent estates; natural rights; easements, profits, and licenses; covenants running with the land; adverse possession and adverse user. 5:50 to 7:40 P.M.
- 205 *Civil Procedure* (4) Weston
Function and composition of pleadings, including their relation to proof. Emphasis is upon reforms, as exemplified by modern code provisions and the Federal Rules of Civil Procedure. 9:10 to 11:00 P.M.
- 247 *Commercial Paper* (4) Orentlicher
Bills of exchange, promissory notes, and checks, especially under the Negotiable Instruments Law. 5:50 to 7:40 P.M.
- 251 *Restitution* (2) Mayo
Legal remedies for restitution of benefits obtained or conferred by performance of contract, misrepresentation, mistake, and coercion. Section A: 11:10 to 12:00 A.M.; section B: Mon. and Wed., 5:50 to 7:40 P.M.; Fri., 5:50 to 6:40 P.M.
- 303 *Administrative Law* (4) Davison
Legislative setting for administrative bodies; judicial control of administrative action, public utilities, taxation, alien laws. Federal Trade Commission, workmen's compensation, etc. 9:10 to 11:00 A.M.
- 315 *Conflict of Laws* (4)
Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. 5:50 to 7:40 P.M.
- 337 *Future Interests* (2) Benson
Future interests at common law and under modern statutes, construction of limitations, power of appointment, rule against perpetuities. Section A: 12:10 to 1:00 P.M.; section B: Tues. and Thurs., 5:50 to 7:40 P.M.; Fri., 6:50 to 7:40 P.M.

SECOND SESSION

- 123x Criminal Law and Procedure (4)** Cooper
Origin and purposes of criminal law; elements of criminal liability; mental disorders; solicitation, attempt, and conspiracy; crimes against the person, against property, and against both; statutory offenses; criminal procedure, with consideration of Federal Rules of Criminal Procedure. 5:50 to 7:40 P.M.
- 223x Domestic Relations (2)** Mallison
Marriage, annulment, and divorce; rights of husband and wife; rights of parent and child; infants. 9:10 A.M.
- 234 Evidence (4)** Fryer
Functions of court and jury; witnesses; hearsay, opinion, and circumstantial evidence; proof of authenticity and contents of writings. 10:10 to 12:00 A.M.
- 250 Conveyances and Wills (4)** Cunningham
Land contracts, conveyances, mortgages, recording; formation and revocation of wills; testate and intestate succession. 5:50 to 7:40 P.M.
- 305x Local Government Law (2)** Mallison
Organization, powers, functions, and legal relations of local governmental units. 12:10 P.M.
- 376 Taxation—Federal Income (4)** Fey
Federal income taxation; imposition and computation problems. 5:50 to 7:40 P.M.
- 381x Trusts (4)** Weaver
Creation, elements, administration, enforcement, and termination of trusts. Liabilities to and of third persons. Resulting and constructive trusts. 10:10 to 12:00 A.M.
- 435x Jurisprudence (4)** Collier
History of jurisprudence; schools of jurists, particularly the nineteenth century schools; sociological jurisprudence; theories of justice; the nature of law; law and morals; law and the state; the scope and subject matter of law; sources and forms of law; the traditional element; analysis of general legal concepts. 5:50 to 7:40 P.M.

MATHEMATICS

- 3 College Algebra (3)** The Staff
Prerequisite: one year each of high school algebra and high school geometry. Section A: 9:10 A.M.; section B: 7:10 P.M.
- 6 Plane Trigonometry (3)** The Staff
Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor). Section A: 11:10 A.M.; section B: 6:10 P.M.

12 *Analytic Geometry* (3)

The Staff

Prerequisite: Mathematics 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry. Section A: 9:10 A.M.; section B: 7:10 P.M.

19 *Differential Calculus* (3)

The Staff

Prerequisite: Mathematics 12. Section A: 10:10 A.M.; section B: 6:10 P.M.

20 *Integral Calculus* (3)

The Staff

Prerequisite: Mathematics 19. Section A: 11:10 A.M.; section B: 7:10 P.M.

123 *Theory of Equations* (3)

Johnston

Prerequisite: Mathematics 20. 6:10 P.M.

132 *Differential Equations* (3)

Taylor

Prerequisite: Mathematics 20. 10:10 A.M.

PHARMACY

192 *Hospital Pharmacy* (1)

Cooper

Prescription practice in the University Hospital. Prerequisite: Pharmacy 102. Laboratory (3 hours)—hours to be arranged.

PHILOSOPHY

51 *Introduction to Philosophy* (3)

Rose

A critical introduction to the problems of modern philosophy in relation to scientific and social developments since the Renaissance. Tues., Wed., and Thurs., 5:35 to 7:00 P.M.

52 *Introduction to Philosophy* (3)

Rose

Continuation of Philosophy 51. Introduction to issues in the philosophy of science and social philosophy. May be taken concurrently with Philosophy 51. Tues., Wed., and Thurs., 7:10 to 8:35 P.M.

121 *Logic* (3)

Rose

The formal logic of inference in deductive systems. Tues., Wed., and Thurs., 11:10 A.M. to 12:35 P.M.

PHYSICS

5 *General Physics* (3)

Koehl

An introduction to the phenomena of light, heat, force, energy, and the properties of matter. This course may be taken as a terminal course by non-science students who wish an introduction to the physical sciences. Prerequisite: high school algebra and plane geometry. Material fee, \$9.

Section	Lecture	Laboratory	Recitation
A	MW 11:10 am.....	TTh 1:10- 3:30 pm.....	TTh 11:10 am.....
B	MW 11:10 am.....	TTh 8:10-11:00 am.....	TTh 11:10 am.....

6 General Physics (3)

Mechanics, wave-motion, sound, and optical instruments. Prerequisite: Physics 5*; high school algebra and plane geometry. Material fee, \$9.

Section	Lecture	Laboratory	Recitation
A	TTh 1:10 pm	MW 2:10-4:30 pm	MW 1:10 pm
B	TTh 6:10 pm	MW 8:10-10:30 pm	MW 6:10 pm
C	TTh 6:10 pm	TTh 7:10-9:30 pm	MW 7:10 pm

8 General Physics (3)

Koehl

Foundation of modern physics—the experimental evidence concerning light waves and quanta, X-rays, and radiowaves; electrons, protons, and other elementary particles; atomic and molecular structure; and nuclear physics. Prerequisite: Physics 6 and 7. Lecture—Mon., Wed., and Fri., 6:10 p.m.; recitation—Tues. and Thurs., 6:10 p.m.

128 Sound (3)

Cheney

Production, propagation, and detection of sound waves; vibrations of sounding bodies; acoustic instruments and acoustic measurements. Prerequisite: Physics 8; Mathematics 20. 7:10 p.m.

POLITICAL SCIENCE ‡**9 Government of the United States ‡ (3)**

West, _____

Section A: 10:10 A.M.; section B: 6:10 P.M.

10 Government of the United States ‡ (3)

Ludden, West

Section A: 9:10 A.M.; section B: Mon., Wed., and Thurs., 7:10 to 8:35 P.M.

113 Political Problems of the British Commonwealth of Nations (3)

Kraus

10:10 A.M.

118 Political Theory (3)

Kraus

11:10 A.M.

127 Commercial Law: Contracts, Agency, and Bailments (3)

6:10 P.M.

128 Commercial Law: Negotiable Instruments, Property, Sales, Mortgages (3)

7:10 P.M.

171 International Politics (3)

Ludden

11:10 A.M.

* This prerequisite may be waived for students who have credit for a high school physics course which included individual laboratory work, provided they pass the qualifying examination given at the dates specified in the University calendar.

‡ Political Science 9-10 is prerequisite to all other courses in Political Science.

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|-----|---|---------|
| 172 | <i>International Organization: the United Nations</i> (3) | Ludden |
| | Mon., Wed., and Thurs., 7:10 to 8:35 P.M. | |
| 181 | <i>International Law</i> (3) | Brewer |
| | 8:10 A.M. | |
| 182 | <i>International Law</i> (3) | Brewer |
| | 9:10 A.M. | |
| 220 | <i>Reading Course in Political Theory</i> (3) | Kraus |
| | Tues. and Thurs., 8:10 P.M. | |
| 257 | <i>Public Policy Formulation and Administration</i> * (3) | Johnson |
| | Mon. and Wed., 8:10 P.M. | |
| 265 | <i>Workshop in Public Administration</i> * (3) | Johnson |
| | Tues. and Thurs., 8:10 P.M. | |
| 281 | <i>Seminar: International Law and Relations</i> (3) | Brewer |
| | Mon. and Wed., 8:10 P.M. | |

PSYCHOLOGY

- | | | |
|-----|---|---------------|
| 1 | <i>General Psychology</i> ‡ (3) | Caldwell, Fox |
| | The fundamental principles underlying human behavior. Section A: Mon., Wed., and Fri., 11:10 A.M. to 12:35 P.M.; section B: Mon., Wed., and Fri., 5:35 to 7:00 P.M. | |
| 2 | <i>Applied Psychology</i> (3) | Caldwell |
| | The applications of psychology in business, industry, medicine, law, guidance, education, and social problems. 10:10 A.M. | |
| 22 | <i>Introduction to Educational Psychology</i> (3) | Hunt |
| | Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. 9:10 A.M. | |
| 29 | <i>Child Psychology</i> (3) | Fox |
| | A genetic approach to the study of the child. Mon., Wed., and Fri., 7:10 to 8:35 P.M. | |
| 98 | <i>Abnormal Psychology</i> (3) | Hunt |
| | The causes, diagnosis, treatment, and prevention of the various types of maladjustments and mental disorders. 10:10 A.M. | |
| 121 | <i>Educational Psychology</i> (3) | Faith |
| | Advanced course in educational psychology. Open on the individual study plan to a limited number of students. Hours to be arranged. | |

* Primarily for majors in the School of Government.

‡ Psychology 1 is prerequisite to all other courses in Psychology.

- 129 *Introduction to Counseling and Guidance* (3) Faith
A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling. Mon. and Wed., 7:10 to 9:15 P.M.
- 131 *Psychological Tests* (3) Mosél
A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$5. Mon., Wed., and Fri., 11:10 A.M. to 12:35 P.M.
- 144 *Personnel Psychology* (3) Mosél
The applications of psychology to personnel work in education, business, industry, and government. Tues. and Thurs., 5:35 to 7:40 P.M.
- 151 *Social Psychology* (3) Tuthill
The social foundations of attitudes and behavior. Individual adjustment to group situations, such as the family, school, and occupation. The psychological basis of race prejudice, nationalism, and war. 9:10 A.M.
- 156 *Psychology of Propaganda and Public Opinion* (3) Tuthill
The psychology of opinion formation, the measurement of opinion, the social determinants of attitudes, the psychological processes in propaganda, the bases of receptivity to propaganda, psychological warfare. Mon., Wed., and Fri., 5:35 to 7:00 P.M.
- 193 *Readings in Psychology* (3) The Staff
For undergraduate majors. Supervised readings on specific topics in psychology; with conferences. Open only to seniors with 18 or more credits in psychology with a quality point index of 3.00 or higher. Special permission of staff member under whom course is to be taken is necessary. Hours to be arranged.
- 204 *Contemporary Developments in Psychology* (3) Fox
Certain modern developments are treated, e.g., action research, Eysenck's personality investigations, various new theories, P and Q techniques, etc. Tues. and Thurs., 10:10 A.M. to 12:15 P.M.
- 205 *Field Work in Psychology* (3) The Staff
Supervised field work in agencies providing psychological service. Admission by permission of the Executive Officer of the Department. Hours to be arranged.
- 207 *Readings in Psychology for Graduate Students* (3) The Staff
Supervised readings with conferences on specified topics in psychology. Hours to be arranged.
- 225 *Seminar: Mental Hygiene* (3) Caldwell
A study of the mental health problems with special attention to programs of prevention. Tues. and Thurs., 6:10 to 8:00 P.M.

- 245 *Employee Motivation and Morale* (3) Mosé
Application of the principles of primary group functioning and group-centered administration to the problem of motivating employees, building morale, and strengthening human relations. Emphasis is upon the use of group dynamics in supervision and leadership. Tues. and Thurs., 8:10 to 10:00 P.M.
- 254 *Seminar: Group Dynamics* (3) Tuthill
The experimental study of small groups; autocratic and democratic group climates; interaction process analysis; Lewin's field-theoretical approach to individual and group processes. Mon. and Wed., 8:10 to 10:00 P.M.
- 295 *Research in Psychology* (arr.) The Staff
Hours and credits to be arranged.
- 299 *Thesis* (3) The Staff

SPECIAL SIX-WEEK SESSION

- 227 *Seminar: Counseling and Guidance* (3) Dreese
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements and Psychology 129 or the equivalent. 10:20 to 11:20 A.M.

RELIGION

- 60 *History of Religions* (3) Folkemer
Judaism, Christianity, and Islam; analysis of early development, thought, life, institutions, and expansion. Recent issues and trends examined. Mon. through Thurs., 11:10 A.M. to 12:15 P.M.
- 104 *Life and Thought of the Apostle Paul* (3) Folkemer
Greek and Hebrew backgrounds of early Christianity, the Roman World of the first century, religious and social conditions affecting the spread of Christianity, the life and journeys of Paul, Paul's teaching and presentation of the Christian faith, the place of the Pauline epistles in the New Testament. Mon. through Thurs., 6:00 to 7:05 P.M.

ROMANCE LANGUAGES AND LITERATURES

FRENCH

- †1-2 *First-year French* (3-3) The Staff
For beginners. Grammar, composition, drill in pronunciation, translation of modern French prose. Second half begins July 20. Section A: 8:10 to 10:00 A.M.; section B: 6:10 to 8:00 P.M.
- †3-4 *Second-year French* (3-3) The Staff
Advanced grammar and composition, reading in modern French prose, oral practice, introduction to French civilization. Prerequisite: French 1-2 or two years of high school French. Second half begins July 20. Section A: 8:10 to 10:00 A.M.; section B: 6:10 to 8:00 P.M.

† A dagger preceding an odd-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

SPANISH

†1-2 *First-year Spanish* (3-3) The Staff
For beginners. Grammar, composition, drill in pronunciation, reading of modern Spanish prose. Second half begins July 20. Section A: 8:10 to 10:00 A.M.; section B: 6:10 to 8:00 P.M.

†3-4 *Second-year Spanish* (3-3) The Staff
Advanced grammar and composition, reading of modern Spanish prose, oral practice, introduction to Latin American civilization. Prerequisite: Spanish 1-2 or two years of high school Spanish. Second half begins July 20. Section A: 8:10 to 10:00 A.M.; section B: 6:10 to 8:00 P.M.

RUSSIAN

1-2 *First-year Russian* (3-3) Bates-Yakobson
Beginners course in fundamentals of grammar and punctuation, with graded reading; oral drill and written practice. Second half begins July 20. 6:10 to 8:00 P.M.

SOCIOLOGY *

1 *Introductory Sociology* (3) Geisert, Lavell
The origin and development of culture, man's social nature, types of groups and social institutions, social processes, social change, and social control. Section A: 9:10 A.M.; section B: Mon., Wed., and Fri., 5:35 to 7:00 P.M.

3 *Introductory Sociology* (3) Lavell
The factors producing social change and social disorganization, an analysis of the problems arising from the disorganization of the individual and family. Mon., Wed., and Fri., 7:10 to 8:35 P.M.

124 *Public Welfare* (3) Grady
The organization and public welfare, federal, state, and local; the care of various classes of dependents and methods of treatment, personnel, finance, and public relations. Mon., Wed., and Fri., 5:35 to 7:00 P.M.

142 *Human Migration* (3) Geisert
Factors producing population movements, causes and consequences of international migrations, internal population redistribution, effects of selective migration. 10:10 A.M.

295-96 *Research* (arr.) The Staff
Hours and credit to be arranged.

299-300 *Thesis* (3-3) The Staff

† A dagger preceding an odd-numbered course indicates that it is the first half of a full-year course, the second half of which must be completed before credit is allowed.

* Sociology 1 is a prerequisite to all other courses.

SPEECH

A Speech Clinic

Pettit and Staff

Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering. Fee: \$6 an hour for individual lessons; \$4 an hour for group lessons. Hours to be arranged.

B American Speech for Foreign Students

Pettit and Staff

Individual or group instructions, without academic credit, in the formation of the sounds of spoken English, with emphasis on rhythm and inflection. The International Phonetic Alphabet is used. Fee: \$6 an hour for individual lesson; \$4 an hour for group lessons. Hours to be arranged.

1 Effective Speaking (3)

Leggette and Staff

Preparation and delivery of extempore speeches; developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$3. Section A: 9:10 A.M.; section B: Mon. through Thurs., 7:10 to 8:15 P.M.

2 Extempore Speaking (3)

Stevens

A continuation of Speech 1, which is prerequisite, with emphasis on organization of material and elementary principles of persuasion. 8:10 A.M.

11 Training the Speaking Voice (3)

Pettit and Staff

Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to the study of the sounds of English and the standards of speech. Recording fee, \$3. Section A: 10:10 A.M.; section B: Mon. through Thurs., 5:55 to 7:00 P.M.

32 Oral Reading (3)

Leggette

Reading to others; theory and practice of interpreting the printed page. Prerequisite: Speech 11. Recording fee, \$3. 11:10 A.M.

131 Group Discussion and Conference Leadership (3)

Stevens

The process of thinking and problem solving in committees and small groups, and the methods of leading discussions and conferences. Admission by permission of the instructor. 10:10 A.M.

177-78 Clinical Practice in Speech Therapy (1-1)

Pettit

Case work in remedial speech. This course may be repeated for a total of three credit hours. Prerequisite: Speech 175. Hours to be arranged.

183-84 Clinical Practice in Hearing Therapy (1-1)

Pettit

Case work with persons handicapped with hearing losses. This course may be repeated for a total of three credit hours. Prerequisite: Speech 182. Hours to be arranged.

STATISTICS

51 Introduction to Business and Economic Statistics (3)

Johnson

Survey of elementary principles and procedures for presenting, analyzing, and interpreting statistical data; consideration of characteristic values, measures of variability, sampling processes, index numbers, time series analysis, and simple correlation. Prerequisite: one entrance unit in algebra. Laboratory fee, \$6. Lecture—Mon. through Thurs., 7:10 P.M.; laboratory—Tues. and Thurs., 8:10 to 9:50 P.M.

52 Mathematics of Finance (3)

Johnson

Interest and discount, annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation, building and loan associations. Prerequisite: one entrance unit in algebra. Mon. through Thurs., 5:55 to 7:00 P.M.

53 Introduction to Statistics in Psychology and Education (3)

Weida, Johnson

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, intelligence and other quotients, reliability and validity of tests, normal curve, correlation, elementary sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$6. Lecture—Mon. through Thurs., 11:10 A.M.; laboratory—Tues. and Thurs., 1:10 to 2:50 P.M.

†91-92 Principles of Statistical Method (3-3)

McCall

This course emphasizes the meaning, uses, and application of variates and attributes, measurement and enumeration, averages and dispersion, frequency distributions and their characteristics, errors of measurement and their control, index numbers, trends, cyclical relatives, purposive and random sampling in theory and practice with applications. Prerequisite: one entrance unit in algebra. Students desiring to register for one-half of this course must obtain permission from the instructor. Second half begins July 20. Laboratory fee, \$6 for each half. Lecture—Mon. through Thurs., 6:00 to 8:00 P.M.; laboratory—Mon. and Wed., 8:10 to 10:00 P.M.

117 Analysis of Variance (3)

Weida

The analysis of variance and covariance to segregate factors producing significant variation, a method to estimate experimental error, multiple classification with unequal class frequencies. Prerequisite: Statistics 91-92 or the equivalent. Mon. through Thurs., 5:55 to 7:00 P.M.

118 Correlation and the Chi-Square Test (3)

Weida

Advanced study of simple, partial, and multiple correlation. Rank correlation, the method of contingency, and the problem of normal and non-normal populations. Tests of independence, likeness, and goodness of fit. Prerequisite: Statistics 91-92 or the equivalent. Mon. through Thurs., 7:10 to 8:15 P.M.

† A dagger preceding an odd-numbered course indicates that it is the first half of a full year course, the second half of which must be completed before credit is allowed.

ZOOLOGY

- 1-2 *Introduction to Zoology (4-4)* Mortensen, Hansen
An introduction to the study of the structure, functions, and relations of animals, and of the fundamental biological principles involved. Material fee, \$9 for each half. Nine-week term. Zoology 2 begins July 23 and ends August 24. Lecture—Mon. through Fri., 6:10 P.M.; laboratory—Mon. through Fri., 7:10 to 10:00 P.M.
- 137 *Histology (3)* Young
An introduction to the microscopical anatomy of normal tissues and organs. Prerequisite: Zoology 2 or the equivalent. Material fee, \$6. Eight weeks term. Lecture—Mon. and Wed., 7:10 P.M.; laboratory—Mon. and Wed., 8:10 to 10:00 P.M. and Tues. and Thurs., 7:10 to 9:00 P.M.
- 295 *Research (3)* The Staff
Investigation of special problems. Hours to be arranged.
- 299 *Thesis (3)* The Staff

SCHEDULE OF CLASSES

HOURLY SCHEDULE OF CLASSES •

7:10	8:10	9:10	10:10	11:10
Acct 111 (MTWTh at 7) Hist 39 (at 7)	Acct 1 Air Science 31 drill (F to 10) Bus Adm 105 Chem 11-12 (8:30-1:20) Chem 151-52 (8:30-1:20) Econ 121 Fr 1-2A (to 10) Fr 3-4A (to 10) Hist 71 (at 8) Hist 130 (at 8) Phys 5B lab (TTh to 11) Pol Sc 181 Span 1-2A (to 10) Span 3-4A (to 10) Speech 2	Acct 101 Air Science 51 lect (MTWTh) Bus Adm 101 Econ 1A Eng A—Sect A Eng 1A Eng 51 Eng 175 Geog 51 Ger 1-2A (to 11) Hist 173 Math 3A Math 12A Pol Sc 10A Pol Sc 182 Psych 22 Psych 151 Soc 1A Speech 1A	Bot 1 (MWF to 12; TTh to 11) Bus Adm 131 Econ 2A Econ 181 Eng 2A Eng 71 Eng 165 Geog 72 Hist 174 Math 19A Math 132 Pol Sc 9A Pol Sc 113 Psych 2 Psych 98 Psych 204 (TTh to 12:15) Soc 142 Speech 11A Speech 131	Bot 2 (TTh to 1) Bus Adm 141 Econ 133 Eng 1B Hist 152 Math 6A Math 20A Phil 121 (TWTTh to 12:35) Phys 5A lect (MW) Phys 5A rec (TTh) Phys 5B lect (MW) Phys 5B rec (TTh) Pol Sc 118 Pol Sc 171 Psych 1A (MWF to 12:35) Psych 131 (MWF to 12:35) Relig 60 (MTWTh to 12:15) Speech 32 Stat 53 lect (MTWTh)

• Classes meet Monday through Friday unless otherwise indicated. Seminars and research courses for which hours are to be arranged, courses in the Law School and the School of Education will be found under the departmental announcements.

AFTERNOON CLASSES

12:10	1:10	2:10
Botany 2 (MWF)	Biology 1-2,* (to 5) Chem 21* (to 5) Phys 5A lab (TTh to 3:30) Phys 6A lect (TTh) Phys 6A rec (MW) Stat 53 lab (TTh to 2:50)	Phys 6A lab (MW to 4:30)

EVENING CLASSES

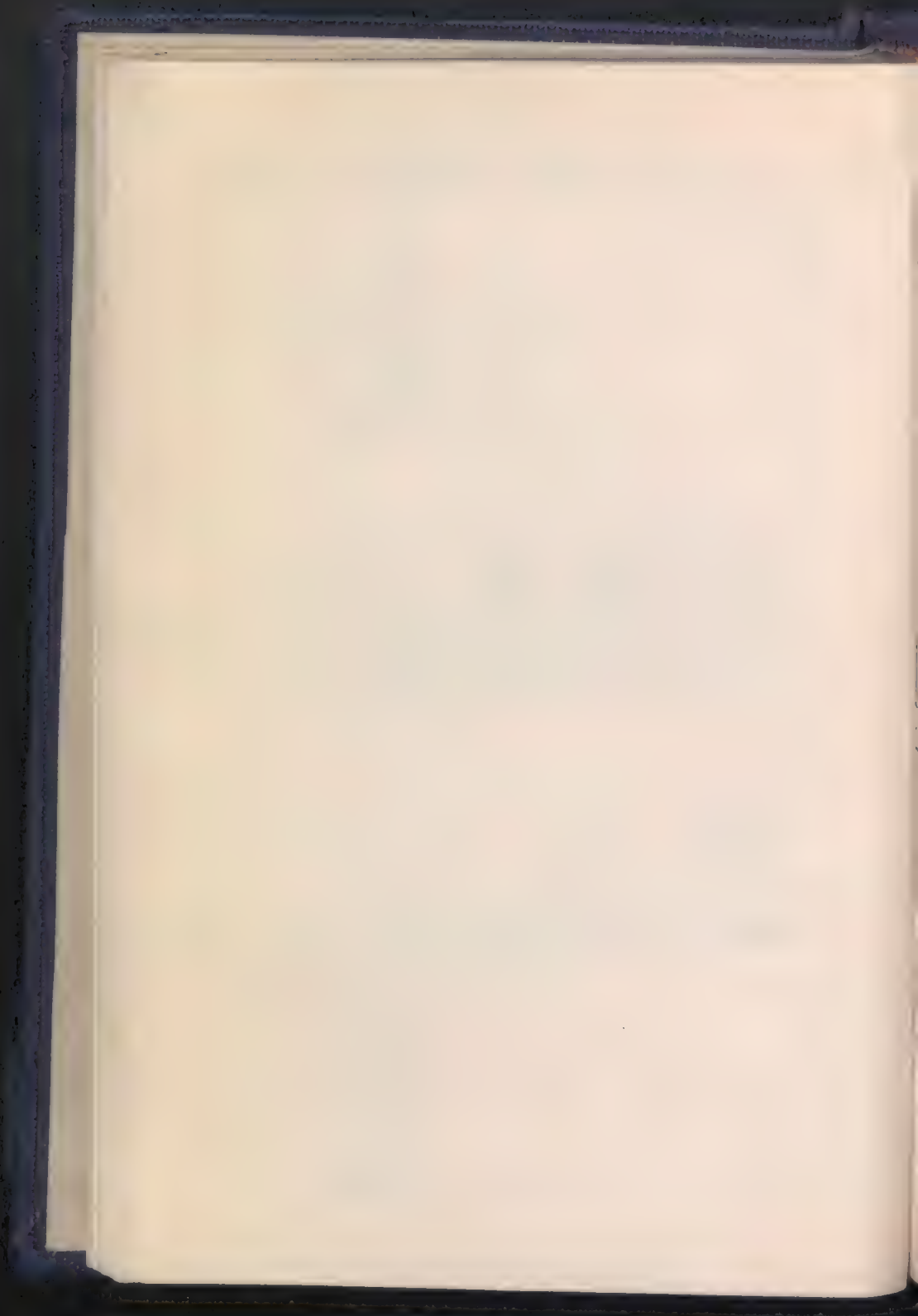
5:10	6:10	7:10	8:10
Art 71 Econ 166 Econ 213 (MW to 7) Geog 185 Phil 51 (TWTh 5:35-7) Psych 11B (MWF 5:35-7) Psych 144 (TTh 5:35-7:40) Psych 156 (MWF 5:35-7) Soc 11B (MWF 5:35-7) Soc 124 (MWF 5:35-7) Speech 11B (MTWTh 5:55-7)	Accounting 121 Accounting 231 (MW to 8:15) Art 72 Bus Adm 109 Bus Adm 198 Bus Adm 291 (MW to 8) Econ 11B Econ 101 Econ 182 Eng 72 Eng 91 Eng 136	Accounting 1-2 (to 9) Accounting 155 (TTh to 9:25) Bus Adm 138 (MW to 9:25) Bus Adm 147 (TTh to 9:25) Econ 2B Econ 109 Econ 215 (MW to 9) Econ 251 (TTh to 9) Eng B Eng 1C Eng 11 Eng 52	Bus Adm 232 (TTh to 10) Bus Adm 296 (MW to 10) Eng A—Sect B Eng 2B Eng 251 (TTh to 10) Phys 6B lab (MW to 10:30) Pol Sc 220 (TTh) Pol Sc 257 (MW) Pol Sc 265 (TTh) Pol Sc 281 (MW) Psych 245 (TTh to 10) Psych 254 (MW to 10)

* Nine-week term. Second half—July 23 to August 24.

EVENING CLASSES (Continued)

5:10	6:10	7:10	8:10
Stat 52 (MTWTh 5:55-7) Stat 117 (MTWTh 5:55-7)	Fr 1-2B (to 8) Fr 3-4B (to 8) Geog 161 Ger 1-2B (to 8) Ger 3-4 (to 8) Hist 72 Hist 147 Hist 166 Math 6B Math 19B Math 123 Phys 6B lect (TTh) Phys 6B rec (MW) Phys 6C lect (TTh) Phys 8 Pol Sc 9B Pol Sc 127 Psych 225 (TTh to 8) Relig 104 (MTWTh 6-7:05) Russian 1-2 (to 8) Span 1-2B (to 8) Span 3-4B (to 8) Stat 91-92 lect (MTWTh 6-8) Zoo 1-2 lect *	Eng 183 Geog 127 Hist 40 Hist 175 Math 3B Math 12B Math 20B Phil 52 (TWTh to 8:35) Phys 6C rec (MW) Phys 6C lab (TTh to 9:30) Phys 128 Pol Sc 10B (MWTh to 8:35) Pol Sc 128 Pol Sc 172 (MWTh to 8:35) Psych 29 (MWF to 8:35) Psych 129 (MW to 9:15) Soc 2 (MWF to 8:35) Speech 1B (MTWTh to 8:15) Stat 51 lect (MTWTh) Stat 118 (MTWTh to 8:15) Zoo 1-2 lab * (to 10) Zoo 137 lect (MW) Zoo 137 lab (TTh to 9)	Stat 51 lab (TTh to 9:50) Stat 91-92 lab (MW to 10) Zoo 137 lab (MW to 10)

* Nine-week term. Second half—July 23 to August 24.



2

THE CATALOGUE ISSUE

1953-54



THE
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UNIVERSITY

BULLETIN

VOL. LII

No. 5

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WASHINGTON, D. C.

PUBLISHED IN MAY
MCMLIII

BY THE UNIVERSITY

THE
HISTORICAL
GEOGRAPHY
OF
THE
MEDITERRANEAN
SEA

BY
J. H. MURRAY

WITH
A
PREFACE BY
J. H. MURRAY

THE
HISTORICAL
GEOGRAPHY
OF
THE
MEDITERRANEAN
SEA

BY
J. H. MURRAY

THE
HISTORICAL
GEOGRAPHY
OF
THE
MEDITERRANEAN
SEA

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THE UNIVERSITY CALENDAR

1953							1954													
July							January							July						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	..	1	2	..	..	..	..	1	2	3
5	6	7	8	9	10	11	3	4	5	6	7	8	9	4	5	6	7	8	9	10
12	13	14	15	16	17	18	10	11	12	13	14	15	16	11	12	13	14	15	16	17
19	20	21	22	23	24	25	17	18	19	20	21	22	23	18	19	20	21	22	23	24
26	27	28	29	30	31	..	24	25	26	27	28	29	30	25	26	27	28	29	30	31
..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
August							February							August						
..	..	..	..	..	..	1	..	1	2	3	4	5	6	1	2	3	4	5	6	7
2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14
9	10	11	12	13	14	15	14	15	16	17	18	19	20	15	16	17	18	19	20	21
16	17	18	19	20	21	22	21	22	23	24	25	26	27	22	23	24	25	26	27	28
23	24	25	26	27	28	29	28	..	..	..	..	..	..	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
September							March							September						
..	..	1	2	3	4	5	..	1	2	3	4	5	6	..	..	..	1	2	3	4
6	7	8	9	10	11	12	7	8	9	10	11	12	13	5	6	7	8	9	10	11
13	14	15	16	17	18	19	14	15	16	17	18	19	20	12	13	14	15	16	17	18
20	21	22	23	24	25	26	21	22	23	24	25	26	27	19	20	21	22	23	24	25
27	28	29	30	..	..	..	28	29	30	31	..	..	..	26	27	28	29	30	..	..
October							April							October						
..	..	..	..	1	2	3	..	..	..	..	1	2	3	..	..	..	..	..	1	2
4	5	6	7	8	9	10	4	5	6	7	8	9	10	3	4	5	6	7	8	9
11	12	13	14	15	16	17	11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	31	25	26	27	28	29	30	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..
November							May							November						
1	2	3	4	5	6	7	..	..	..	..	..	..	1	..	1	2	3	4	5	6
8	9	10	11	12	13	14	2	3	4	5	6	7	8	7	8	9	10	11	12	13
15	16	17	18	19	20	21	9	10	11	12	13	14	15	14	15	16	17	18	19	20
22	23	24	25	26	27	28	16	17	18	19	20	21	22	21	22	23	24	25	26	27
29	30	..	..	..	..	..	23	24	25	26	27	28	29	28	29	30	..	..	..	..
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..
December							June							December						
..	..	1	2	3	4	5	..	..	1	2	3	4	5	..	..	..	1	2	3	4
6	7	8	9	10	11	12	6	7	8	9	10	11	12	5	6	7	8	9	10	11
13	14	15	16	17	18	19	13	14	15	16	17	18	19	12	13	14	15	16	17	18
20	21	22	23	24	25	26	20	21	22	23	24	25	26	19	20	21	22	23	24	25
27	28	29	30	31	..	..	27	28	29	30	..	..	..	26	27	28	29	30	31	..

THE UNIVERSITY CALENDAR

1953-54

Date	Day	Occasion
1953		
FALL TERM:		
Sept. 21	Monday	Orientation Assembly for all new students
Sept. 22	Tuesday	Freshman tests Examinations for students who wish to qualify for advanced courses or waive curriculum requirements Curriculum Assembly for all new students
Sept. 23	Wednesday	Meeting of the University Faculty Pre-advising for all new students
Sept. 24 and 25.	Thursday and Friday..	Registration*
Sept. 28	Monday	Academic year begins*
Oct. 8	Thursday	Stated meeting of the Board of Trustees
Oct. 9	Friday	Last day on which candidates may file thesis subjects for the Master's degrees to be conferred in February
Oct. 16	Friday	Last day on which candidates may file dissertation subjects for the degrees of Doctor of Philosophy, Doctor of Education, and Doctor of Business Administration to be conferred the following June
Nov. 11	Wednesday	Fall Convocation. Holiday
Nov. 26-28 ...	Thursday through Saturday	Thanksgiving recess
Dec. 1	Tuesday	Meeting of the Academic Council
Dec. 10	Thursday	Stated meeting of the Board of Trustees
Dec. 21-Jan. 2.	Monday through Saturday	Christmas recess
1954		
Jan. 4	Monday	Classes resume
Jan. 8	Friday	Last day for receiving theses of candidates for the Master's degrees and for the professional degrees in Engineering to be conferred in February

* In the School of Medicine, registration is conducted September 17 and 18, classes begin September 21.

THE UNIVERSITY CALENDAR—Continued

Date	Day	Occasion
Jan. 8	Friday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy; Doctor of Juridical Science, Doctor of Education, and Doctor of Business Administration to be conferred in February
Jan. 20	Wednesday	Last day of classes for the Fall Term
Jan. 25-Feb. 2.	Monday through Tuesday	Examination period
SPRING TERM: Feb. 3	Wednesday	Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Feb. 4 and 5...	Thursday and Friday	Registration
Feb. 8	Monday	Classes resume for the spring term
Feb. 11	Thursday	Stated meeting of the Board of Trustees
Feb. 19	Friday	Last day on which candidates may file thesis subjects for the Master's degrees to be conferred in June
Feb. 22	Monday	Winter Convocation. Holiday
March 1	Monday	Applications for fellowships for 1954-55 should be filed
March 11	Thursday	Stated meeting of the Board of Trustees
April 1	Thursday	Applications for scholarships for 1954-55 should be filed
April 6	Tuesday	Meeting of the University Faculty
April 15	Thursday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy, Doctor of Education, and Doctor of Business Administration to be conferred in June
April 16-21 ...	Friday through Wednesday	Easter recess
April 27	Tuesday	Meeting of the Academic Council
May 7	Friday	Last day for receiving theses of candidates for the Master's degrees and for the professional degrees in Engineering to be conferred in June

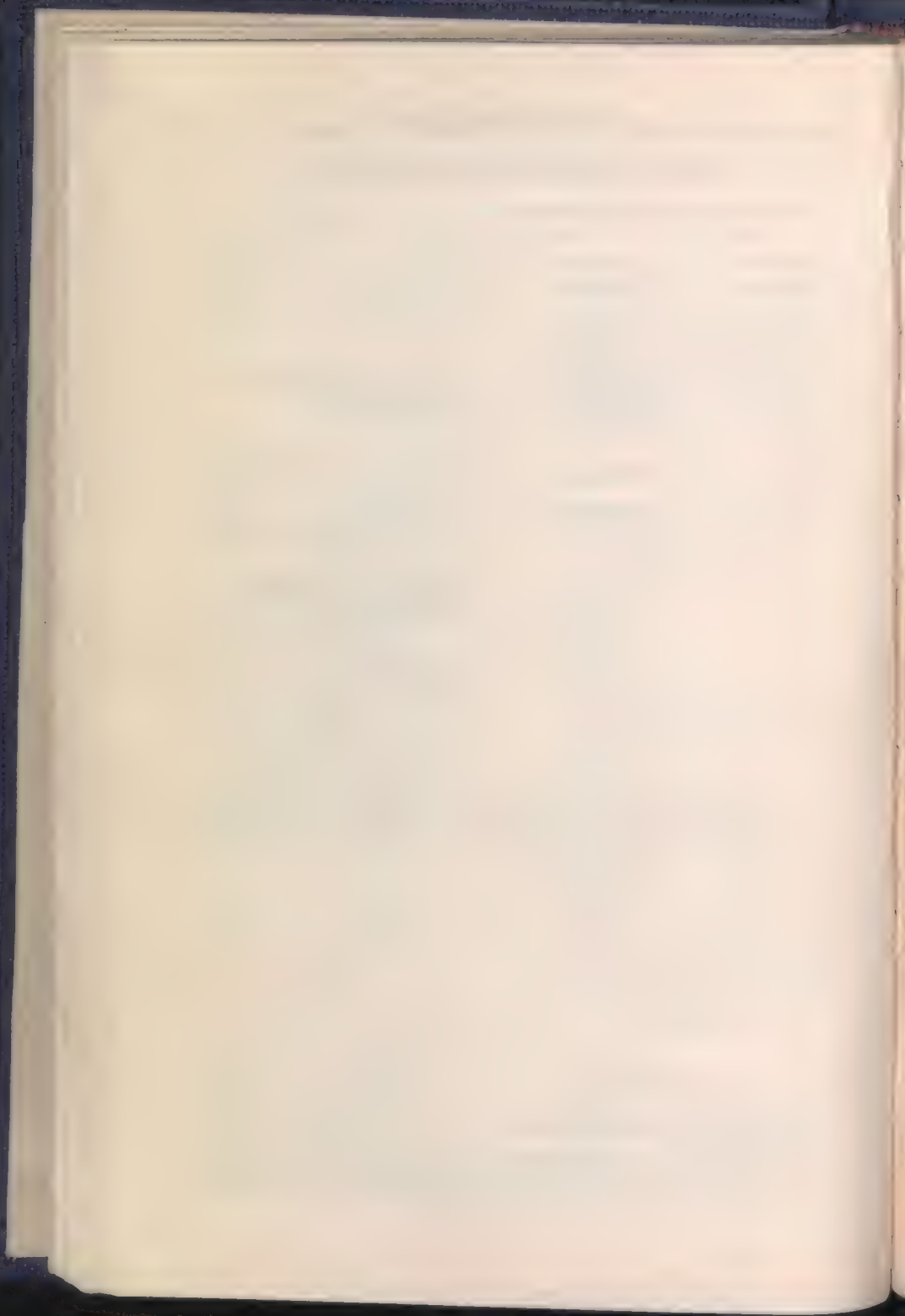
THE UNIVERSITY CALENDAR—Continued

Date	Day	Occasion
May 13	Thursday	Annual meeting of the Board of Trustees
May 19	Wednesday	Last day of classes for the spring term
May 24-June 1.	Monday through Tuesday	Spring term examination period
June 6	Sunday	Baccalaureate Sermon
June 9	Wednesday	Commencement
SUMMER TERM:*		
June 21	Monday	Registration for the eight-week term
June 22	Tuesday	Classes begin
Aug. 14	Saturday	Foreign-language examinations for candidates for the Master's degrees
Aug. 16	Monday	Eight-week term ends
		Last day for receiving theses for the Master's degrees and for the professional degrees in Engineering to be conferred in November
Sept. 10	Friday	Last day for receiving dissertations of candidates for the degrees of Doctor of Philosophy and Doctor of Education to be conferred in November
Sept. 23 and 24.	Thursday and Friday..	Registration for the fall term of the academic year 1954-55

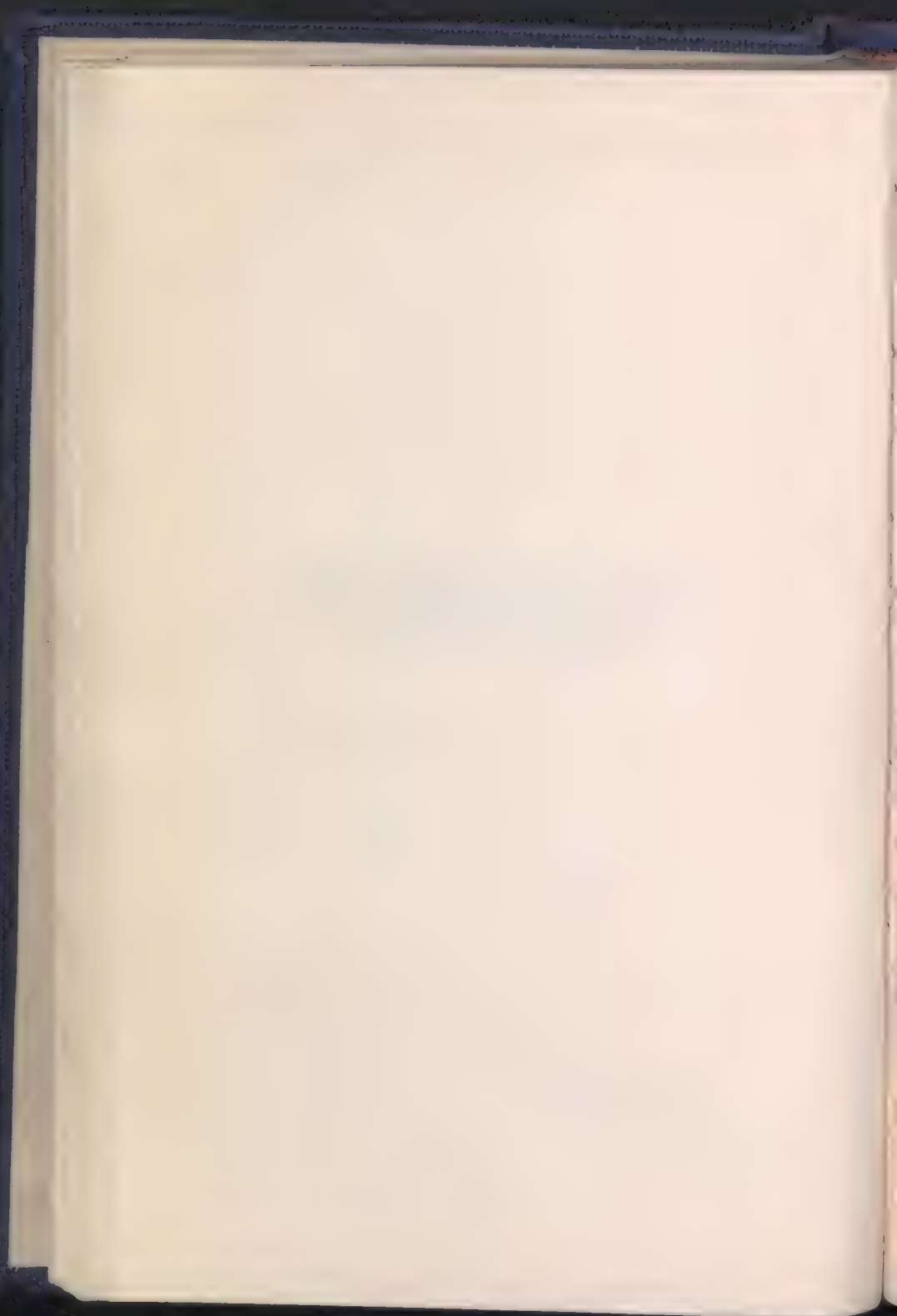
* For all schools and colleges offering courses in the Summer Term except the Law School and the School of Education.

The dates of the calendar for the Law School will be announced.

The calendar for the special sessions of the School of Education is as follows: Pre-session, June 14-July 2; Six-Week Session, July 5-August 17; Post-session, August 16-September 3. Registration for each of these sessions is on the first day of classes.



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OF THE UNIVERSITY



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Alfred Henry Lawson, LL.B.; Washington Loan and Trust Company
John Keown McKee; 3010 Forty-fifth Street
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Lloyd Bennett Wilson; Willow Spring, Bluemont, Virginia
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1955

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1956

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Lawrence Daniel Folkemer, Ph.D., *Director of Religious Activities*

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James Harold Fox, A.M., Ed.D., *Dean of the School of Education*
Arthur Edward Burns, Ph.D., *Dean of the School of Government*
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Warren Reed West, Ph.D., *Dean of the Division of Special Students*
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Carr Bartleson Lavell, A.M., *Assistant Dean in the Junior College*

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 Beatrice Coffman Warder, *Assistant to the Disbursing Officer*
 Virginia Lee Bell, B.S., *Accounting Machine Operator*

Marie Kauffman Leath, *Voucher Assistant and Accounting Machine Operator*

Elizabeth Sanders Allen, *Accounting Machine Operator*

Carmen Garcia, *Payroll Assistant*

Anne Crampton Fisher, A.B., *Clerk*

OFFICE OF THE CASHIER

Joseph Hume Spicer, B.C.S., *Cashier*

Daniel John Tyrrell, *Assistant Cashier*

William Dewell McCown, A.B., *Assistant Cashier, Veterans Section*

Mary Beck Rich, B.S., *Assistant to the Cashier*

Nina Jo Hackett, *Assistant, Veterans Section*

Betty Lou George, *Assistant*

Barbara Terry, *Assistant, Veterans Section*

Carol Mae Holmgren, *Clerk*

Martha Robinson Death, A.B., *Clerk*

Jeannine Delores Miller, *Clerk*

BUSINESS OFFICE

John Clifford Cosgrove, A.B., *Business Manager*

John Collum Einbinder, A.B. in Govt., *Assistant Business Manager*

Adam Clarke Harris, *Assistant Business Manager*

Henrietta Rosenblatt, *Assistant to the Business Manager*

Vincent Duwain Bateman, *Purchasing Agent*

Patricia Russell, *Order Clerk*

Jeanne Harriet Birchall, *Secretary*

Robert Clark, Jr., *Custodial Supervisor*

John Neary, *Clerk, Custodial Office*

Robert Harold Merritt, *Supervisor of University Stores*

Richard Harold Lewis, *Clerk, University Stores*

George Dewey Eckert, *Superintendent of Shop*

Lucille Pleasants, *Clerk, University Shop*

Thomas Houston O'Dell, *Carpenter Foreman, University Shop*

Lilian Wright Smith, *Garden Consultant*

Birdie Harris, *Manager, University Book Store*

Karolina Hedler, B.S., *Assistant Manager, University Book Store*

Wilhelmina Hamilton, *Clerk, University Book Store*

Reiko Terashi Murphy, *Clerk-Typist, University Book Store*

Margaret Hughes Pfafflin, *Chief Telephone Operator*

Dilla Wright, *Telephone Operator*

OFFICE OF THE DIRECTOR OF ADMISSIONS

Margaret LeStourgeon Tymeson, A.B., *Assistant to the Director of Admissions*

Jessie Fair Persun, *Evaluator*

Mary Lee Chatrnuck, *Evaluator*

Shirley Howerth Richards, A.B., *Evaluator*

Eula James, A.M., *Evaluator*

Mary MacLeod Addy, B.S., *Admissions Assistant*

Jane Pennington Hulfish, *Admissions Assistant*

Marjorie Cole Peppers, A.B., *Admissions Assistant*

OFFICE OF THE REGISTRAR

Catherine Jackson, *Assistant to the Registrar*

Virginia Rose Schmidt, *Assistant to the Registrar*

Olive Simmons Usery, *Secretary to the Registrar*

Jean Gordon Enriquez, B.S., *Balance Sheet Clerk*

Dorothy May Chan, *Transcript Clerk*

Margaret Ruth Bates, *Transcript Clerk*

Anita Porro Pinch, *Record Clerk*

Patricia June Jwaideh, *Record Clerk*

Shirley Louise Brown, *Record Clerk*

Mildred Van Horn Johns, *Statistical Clerk*

Gennaro Viola, A.B., *File Clerk*

THE LIBRARY

Davis Miller Simpson, A.M., M.S.M., B.S. in L.S., *Assistant Librarian*

Anna Virginia Appich, A.B., *Assistant Librarian, Ordering*

Mary Elizabeth Thompson, B.S., B.S. in L.S., *Assistant Librarian, Cataloguing*

_____, *Assistant Librarian, Law Library*

Isabella Frances Young, A.B., *Assistant Librarian, Medical Library*

David Lewis Moore, A.B., LL.B., *Assistant Librarian, International Relations*

Anne Albert Best, *Assistant, Cataloguing*

Elinor Ehlschlager, A.B., *Assistant, Reserve Book Reading Room*

Jane Fulcher, A.B., *Assistant, Medical Library*

Margaret Bowen, *Assistant, Medical Library*

June Louise Bernasek, A.M., *Assistant, Periodical Room*

Dorothy Gillum Bryant, A.M., *Assistant, Circulation*

Margaret Laramy Meaker, A.M., *Assistant, Circulation*

Charleene Lightsey Jones, B.S., *Assistant, Circulation*

Edith Sewall Phillips, A.B., *Assistant, Cataloguing*

Joyce Brunkow, B.S., *Assistant, Law Library*

OFFICE OF PUBLIC RELATIONS

PUBLIC RELATIONS OFFICE

Margaret Davis, A.M., *Acting Director of Public Relations*
William Bagwell, M.S., *Special Writer*
John Samuel Toomey, A.B., *Assistant to the Director of Public Relations*
Mary Blackwood Freeman, A.B., *Staff Writer*
Joanne Marie Klein, *Secretary*

ALUMNI RELATIONS OFFICE

Mary Dow, *Assistant Director of Alumni Relations*
Ferne Fletcher, *Secretary-Clerk*
Jane Frances Bowling, *Clerk-Typist*

OFFICE OF THE AIR FORCE RESERVE OFFICERS TRAINING CORPS

Charles Arthur Billman, *Air Force Property Custodian*
Joann Hausladen Smith, *Secretary*

STUDENT ACTIVITIES

Margaret Neal Jewell, *Assistant to the Director of Activities for Women*
Barbara Sillars Harvey, *Secretary, Office of the Director of Activities for Women*
Ann Shearer Hudgins, A.B., *Student Activities Assistant*
Zella Weaver, *Secretary to the Director of Activities for Men*
Virginia Cardwell Eldredge, *Secretary, Office of the Director of Activities for Men*
Jane Ross, *Clerk-Typist in the Office of Physical Education for Men*

INTERCOLLEGIATE ATHLETICS

William Jennings Reinhart, B.B.A., *Head Baseball and Head Basketball Coach*
Eugene Hugh Sherman, Sr., B.S., *Head Football Coach*
Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Assistant Football Coach*
Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Baseball Coach*
Howard Bowers, M.S., *Assistant Football Coach*
Richard Walkup Johnson, A.B., *Assistant Football Coach*
Harry Ledford, *Athletic Trainer*

MUSICAL ACTIVITIES

Robert Howe Harmon, A.B., M.D., *Director of the Glee Club*
Grace Ruble Harmon, *Associate Director of the Glee Club*

UNIVERSITY PLAYERS

William Harold Callahan, A.M., *Managing Director of University Dramatic Activities*

Mary Kransz Schrup, A.B., *Secretary to the Managing Director*

VETERANS EDUCATION

Virginia Mae Sherard, A.M., *Counselor and Assistant to the Director of Veterans Education*

Janet Wildman Johnson, A.B., *Assistant to the Director of Veterans Education*

Denny Virginia Lamb, A.B., *Chief Clerk*

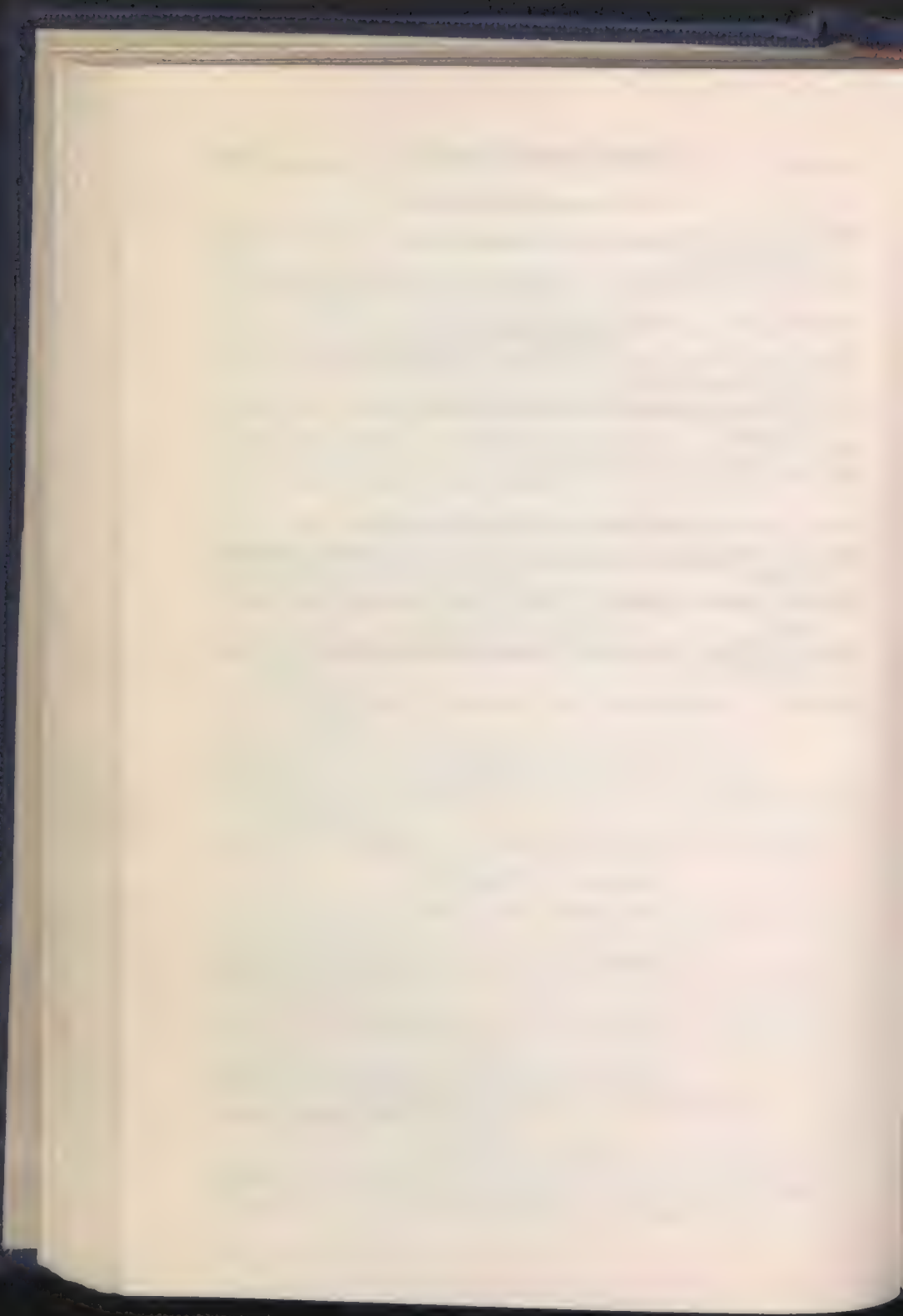
Sally Ann Herman, A.B., *Clerk-Typist*

RESIDENCE AND SORORITY HALLS

Zoa Van Winkle, B.S., *Hostess, Hattie M. Strong Residence Hall for Women*

Virginia Randolph Kirkbride, A.M., *Hostess, Sorority Hall, 2129 G Street*

Dorothy Elizabeth Kodrowski, *Hostess, Residence Hall for Women, 2025 H Street*



THE UNIVERSITY

HISTORY AND ORGANIZATION

HISTORY

The idea of a university located in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

It was George Washington's hope that the "General Government" would extend toward such an institution "a fostering hand". No steps were taken by Congress to carry out the provision of Washington's will, and the stock that he had bequeathed for the establishment of a university in the District of Columbia became valueless owing to the failure of the Potomac Canal properties.

Meanwhile, however, a movement was started by private persons under the leadership of Luther Rice to establish an institution of higher learning at the seat of the National Government for the education of the Baptist ministry and to afford general collegiate training. In 1819 an association was formed by Luther Rice, Obadiah B. Brown, Spencer H. Cone, and Enoch Reynolds for the purpose of raising funds to buy land for the use of the college.

A group of the Nation's leaders who were especially interested in Washington's idea became patrons of the college and contributed to funds raised for the purchase of land and erection of buildings. Among them were James Monroe, President of the United States; William H. Crawford, Secretary of the Treasury; John C. Calhoun, Secretary of War; William Wirt, Attorney General; Return J. Meigs, Postmaster General; and thirty-two members of the Congress.

Legally to implement the college a petition was made to Congress for the incorporation of "the General Convention of the Baptist Denomination in the District of Columbia for evangelical and literary purposes". This petition was denied by Congress, on April 26, 1820, because of its sectarian character.

Failing to obtain a denominational charter, members of the association enlarged their objective to embrace national aims, and with the sponsorship of Government leaders there was presented in Congress a bill for the incorporation of "the Columbian Society for literary pur-

poses", it being proposed to realize in this way "the aspirations of Washington, Jefferson and Madison for the erection of a university at the seat of the federal government".

Acting upon this second petition, on February 9, 1821, Congress chartered Columbian College in the District of Columbia, inserting in the charter by special action the provision "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College or denied any of the privileges, immunities or advantages thereof, for or on account of his sentiments in matters of religion".

Thus Columbian College in the District of Columbia was chartered by Congress as one of the early nonsectarian institutions of higher learning in the United States, under the distinguished favor of President James Monroe and members of his Cabinet.

A tract of approximately forty-seven acres, extending about one-half mile northwest of Boundary Street (Florida Avenue) between Fourteenth and Fifteenth Streets, was purchased and by 1822 the main building was completed sufficiently to use.

Two years later, when the first Commencement was held on December 15, 1824, Congress and the Supreme Court adjourned their sessions to enable their members to attend the exercises. President Monroe, John Quincy Adams, John C. Calhoun, Henry Clay, and the Marquis de Lafayette headed the eminent company in attendance.

By an act of Congress of March 3, 1873, the name of the college was changed to "Columbian University", in recognition of the enlarged scope of the institution. In 1884 the University was moved from its first location on "College Hill", now Columbia Heights, to the new University Hall built for it at Fifteenth and H Streets. Near-by buildings accommodated the School of Medicine and, somewhat later, the Law School.

For a period of six years, from 1898 to 1904, the University was placed under control of the Baptist Denomination. In 1904 an act restoring the original secular character of the University and authorizing change of name to The George Washington University was passed by Congress.

Subsequently all the colleges, schools, and divisions of the University except the School of Medicine were brought together in the area bounded by Nineteenth, Twenty-third, and G Streets, and Pennsylvania Avenue NW. The School of Medicine is situated on H Street between Thirteenth and Fourteenth Streets NW.

The endowment of the University is \$3,250,000.

In 1930 a new plan of academic organization for the liberal arts work was effected in the establishment of the Junior College and the redefining of graduate work, as indicated below.

THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes fourteen colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences; two years of pre-professional work; and two-year terminal courses. Each of these curricula leads to the degree of Associate in Arts.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. It also offers the studies leading to the degrees of Master of Arts and Master of Science in the fields of the liberal arts and sciences.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering, and Master of Science in Engineering. It also directs work leading to the professional degrees in the fields of civil, electrical, and mechanical engineering.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education, and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Accounting, Business Administration, and Statistics, leading to the degree of Bachelor of Arts in Government. Graduate work is offered leading to the following degrees: Master of Arts in Government in the fields of Foreign Affairs, Economic Policy, Accounting, Business and Economic Statistics, and Vocational Counseling; Master of Arts in Public Administration in the fields of General Administration and Governmental Fiscal Administration; Master of Arts in Personnel Administration; Master of Business Administration; and Doctor of Business Administration.

The College of General Studies supplements the adult education pro-

gram of the University through its Off-Campus Division, Campus Division, and Division of Community Services.

The Division of University Students makes available courses for mature students, not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Division of Air Science offers a program of Air Force ROTC training which is integrated with the curricula of the colleges and schools of the University and leads to appointment as a commissioned officer in the United States Air Force Reserve.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women. The University is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. The School of Pharmacy is accredited by the American Council on Pharmaceutical Education as a class "A" school. It is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of the Engineers' Council for Professional Development. The School of Education is a charter member of the American Association of Colleges for Teacher Education.

LOCATION

The George Washington University is in downtown Washington four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce,

and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

GOVERNMENT

The government and general educational management of The George Washington University are vested in a self-perpetuating Board of Trustees, with the President of the University as a member *ex officio*. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.

EDUCATIONAL FACILITIES

BUILDINGS

Buildings, grounds, and equipment are valued at approximately \$18,000,000.

The buildings of the Junior College, Columbian College, the Graduate Council, the Law School, the School of Engineering, the School of Pharmacy, the School of Education, the School of Government, the College of General Studies, the Division of University Students, the Division of Special Students, and the University Hospital and Outpatient Department are located between Nineteenth and Twenty-third Streets and between Pennsylvania Avenue and G Street NW. The School of Medicine is at Fourteenth and H Streets NW. The buildings of the University are as follows:

Chapin Hall, 2128 H Street (rear). Named in honor of the late Stephen Chapin, President of the University from 1828 to 1841. Offices and classrooms of the Air Force ROTC.

Corcoran Hall, 725 Twenty-first Street. Named in honor of the late William W. Corcoran, benefactor of the University and a former member of the Board of Trustees. Offices of the Treasurer, the departments of Chemistry, Electrical Engineering, and Physics; the chemistry, electrical engineering, and physics laboratories; classrooms.

Davis-Hodgkins House, 731 Twenty-second Street. Offices and lounges of engineering students' organizations.

Everglades Apartments, 2223 H Street, a residence hall for nurses.

Faculty Club House, 714 Twenty-first Street.

Gymnasium, 2010-12 H Street.

Hall of Government, 710 Twenty-first Street. The gift of the late Mrs. Henry Alvah Strong, former Trustee of the University. Offices of the Dean of the School of Government, the departments of Accounting, Business Administration, Economics, History, Political Science, and Statistics; classrooms.

Harlan-Brewer House, 1923 H Street. Offices of law student organizations, lounges, reading rooms.

Hospital and Outpatient Department, Washington Circle.

International House, 2110 G Street. Office of the Adviser to Students from Foreign Countries; club rooms.

Lisner Auditorium, 730 Twenty-first Street. The gift of the late Abram Lisner, former Trustee of the University. The Auditorium; Lisner Lounge; offices and classrooms of the Department of Speech.

Mechanical Engineering Building, 735 Twenty-first Street. Offices of the departments of Electrical and Mechanical Engineering; engineering testing laboratories, general laboratories, drafting rooms, and classrooms.

James Monroe Hall, 2115 G Street. Offices of the Dean of the Junior College, the Dean of Columbian College, the Dean of the Division of University Students, the Dean of the School of Education, and the Director of the Air Force Manpower Management Training Program; the departments of Classical Languages, Education, English (English Literature), Germanic Languages, Journalism, Mathematics, Philosophy, Psychology, and Secretarial Studies; classrooms.

- Office of the President, 2003 G Street. Offices of the President, Dean of Faculties, and Administrative Secretary.
- Placement Office, 2114 G Street.
- School of Medicine, 1335 H Street. Offices of the Staff of the School of Medicine; laboratories; the Medical Library; lecture rooms; classrooms; students' rooms.
- Medical Laboratory Building.
- Research Building.
- Sorority Halls:
- 2129 G Street. Apartments of Pi Beta Phi, Chi Omega, Sigma Kappa, Phi Mu, Alpha Delta Pi, Delta Zeta, Zeta Tau Alpha, and Kappa Kappa Gamma sororities.
- 2131 G Street. Apartments of Delta Gamma Sorority and Martha Washington Club.
- 802 Twenty-first Street. Apartment of Phi Sigma Sigma sorority.
- 2112 G Street. Apartments of Kappa Alpha Theta and Kappa Delta sororities.
- Staughton Hall, 707 Twenty-second Street. Named in honor of the late William Staughton, President of the University from 1821 to 1827. Offices and laboratories of the Navy Logistics Research Project and office of the Coordinator of Scientific Activities.
- Stockton Hall, 720 Twentieth Street. Named in honor of the late Rear Admiral Charles Herbert Stockton, President of the University from 1910 to 1918. Offices, library, and lecture halls of the Law School.
- Strong Residence Hall for Women, 620 Twenty-first Street. Named in honor of the donor, the late Mrs. Henry Alvah Strong, former Trustee of the University.
- Student Union, 2125 G Street. Offices of student organizations, student cafeteria and snack bar, reading room, lounge, game and music rooms.
- University Book Store, 2120 H Street.
- University Library, 2023 G Street. The gift of the late Abram Lisner, former Trustee of the University. The library, rooms of the Board of Trustees and the Graduate Council.
- Welling Hall, 814 Twenty-second Street. Residence hall for men. Named in honor of the late James Clarke Welling, President of the University from 1871 to 1894.
- Woodhull House, 2033 G Street. Gift of the late General Maxwell Van Zandt Woodhull, former Trustee of the University. Office of the Director of Activities for Women; meeting rooms for student and alumni activities.
- Building A, 2026 G Street. Offices of the Department of Romance Languages.
- Building B, 2024 G Street. Offices, laboratories, and classrooms of the Department of Home Economics.
- Building C, 2029 G Street. Offices of the Registrar and the Director of Admissions; offices and laboratories of the departments of Biology, Botany, and Zoology; classrooms.
- Building D, 2013 G Street. Office of the Business Manager; Human Resources Research Office.
- Building F, 706 Twentieth Street. Offices of the Dean of the College of General Studies.
- Building G, 712 Twentieth Street. Offices of the Department of English (Composition section).
- Building H, 714-16 Twentieth Street. Offices and locker rooms of the Department of Physical Education for Women.
- Building I, 2135 G Street. Offices, classrooms, and laboratories of the Department of Geography.

Buildings J and L, 2131 and 2129 G Street (rear). Classroom and locker rooms of the Department of Physical Education for Women.
 Buildings M and N, 716-18 Twenty-first Street. Offices of the Dean of the School of Engineering and the Department of Civil Engineering.
 Building O, 2106 G Street. Office of the Department of Religion.
 Building P, 2108 G Street. Offices of the Student Health Service and the Dean of the Division of Special Students.
 Building Q, 2029 H Street. Office of the Director of Veterans Education.
 Building R, 2027 H Street. Offices of the Director of Activities for Men, the Department of Physical Education for Men, and the Athletic Staff.
 Building S, 2025 H Street. Residence hall for women.
 Building T, 2110 G Street. Offices of the Director of the Summer Sessions and the Department of Art; International House (see International House).
 Building U, 2018 I Street. Offices of Alumni Relations and Public Relations.
 Building V, 2114 H Street. Laboratories and classrooms of the Department of Physics.
 Building W, 2128 H Street. Offices of the School of Pharmacy; pharmacy laboratories; classrooms.
 Building X, 725 Twenty-third Street. Drafting rooms and classrooms of the School of Engineering.
 Building Y, 802 Twenty-first Street. Offices, classrooms, and laboratories of the Reading Clinic.

THE UNIVERSITY LIBRARY

The University Library contains 260,000 volumes. The well equipped Library building houses all of the library except the law and medical collections. Over 6,000 bound volumes are added annually, and approximately 1,000 periodicals and publications of learned societies are received currently. Among the special collections of the Library are the Library of the Carnegie Endowment for International Peace, purchased by the University in 1950; the W. Lloyd Wright collection of Washingtoniana, acquired in 1950; the Richard Heinzel Collection of Germanic philology and literature; the Curt Wachsmuth Collection of Greek and Roman literature, archeology, and history; the Mount Vernon Collection on political history, international law, and the social sciences; a representative collection of Spanish American books, the gift of the governments of Hispanic America; the Chauncey Mitchell Depew Public Speaking Collection, the gift of the late Mrs. Depew; and the Art Collection, made available by the American Institute of Architects, and the 7,500 mounted photographs of the Russell Sturgis Collection.

OTHER LIBRARY FACILITIES

The student has access also to the Library of Congress; the Public Library of the District of Columbia and its branches; the Library of the Pan American Union; the Library of the Bureau of Railway Economics; the Library of the United States Department of Agriculture; the Library of the United States Office of Education; the Armed Forces Medical

Library; the Library of the Smithsonian Institution; and many of the other great special collections of the government departments.

GOVERNMENTAL INSTITUTIONS ACCESSIBLE TO STUDENTS

The Congress of the United States has made the scientific resources of the Government accessible to students under the terms of the following joint resolution, approved April 12, 1892:

Resolved by the Senate and House of Representatives of the United States of America, in Congress assembled, That the facilities for research and illustration in the following and any other Governmental collections now existing or hereafter to be established in the city of Washington for the promotion of knowledge shall be accessible, under such rules and restrictions as the officers in charge of each collection may prescribe, subject to such authority as is now or may hereafter be permitted by law, to the scientific investigators and to students of any institution of higher education now incorporated or hereafter to be incorporated under the laws of Congress or of the District of Columbia, to wit:

- One. Of the Library of Congress.
- Two. Of the National Museum.
- Three. Of the Patent Office.
- Four. Of the Bureau of Education.
- Five. Of the Bureau of Ethnology.
- Six. Of the Army Medical Museum.
- Seven. Of the Department of Agriculture.
- Eight. Of the Fish Commission.
- Nine. Of the Botanic Gardens.
- Ten. Of the Coast and Geodetic Survey.
- Eleven. Of the Geological Survey.

ADMISSION

All colleges, schools, and divisions of the University accept men and women, except the Division of Air Science.

Students may enter any college, school, or division of the University except the School of Medicine at the beginning of the fall term, the spring term, or the summer term.

Entrance to the School of Medicine in 1953-54 is permitted only at the opening of the term beginning September 1953.

GENERAL ADMISSION REQUIREMENTS

The following factors are considered in determining the eligibility of an applicant for admission:

1. The adequacy of previous academic work as preparation for the course of study now contemplated—including quantity and quality of work and the standing of the institution in which it was done.
2. The aptitude of the student for the course contemplated.
3. The character of the student.

The University reserves the right to refuse admission to any student who has a previous academic record of such grade as to create doubt of his ability to pursue college work successfully, or who for any other reason would not be a desirable student.

APPLICATION FOR ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$3 (\$5 for the School of Medicine). A recent photograph, with signature, of the applicant must be attached to the blank.

An applicant for admission to the Reserve Officers' Training Corps must also fill out and return a supplemental Air Force ROTC application form.

Applications should be filed not later than July 1 for the fall term, January 1 for the spring term, and May 1 for the summer term.

An applicant from a secondary school must send the high school record form provided by the University to his high school principal with the request that the principal fill out the form and mail it directly to the Office of the Director of Admissions.

An applicant who has previously attended an institution of higher learning must request the registrar of that institution to mail directly to the Office of the Director of Admissions a transcript of his record. If

he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admissions a transcript of his record, *even though credits were not earned*, together with an honorable dismissal from the institution last attended.

The Graduate Record Examination administered by the Educational Testing Service, Princeton, New Jersey is accepted as supplemental evidence of the applicant's educational attainment, and the appropriate report should accompany the application for admission whenever available.

METHODS OF ADMISSION FROM SECONDARY SCHOOLS

An applicant from a secondary school may seek to qualify for admission by certificate or examination.

By Certificate

A certificate of graduation with a minimum of fifteen "units"* from an accredited secondary school and the recommendation from the principal of the secondary school that the applicant is prepared to undertake college work will be considered subject to the following conditions:

1. If the school is accredited by the regional accrediting association, the student must rank not lower than the fourth fifth of his class.
2. If the school is not listed by the regional accrediting association, but has been accredited by the state accrediting agency, the student must rank in the upper three fifths of his class.

By College Entrance Board Examinations

An applicant may qualify by passing satisfactorily College Entrance Board examinations as prescribed by the Director of Admissions. These examinations are given at a large number of examination centers throughout the United States, including Washington, D. C., on May 16, August 12, and December 5, 1953; and January 9, March 13, May 15, and August 13, 1954.

Arrangements for the examinations should be made with the College Entrance Examination Board, Post Office Box 592, Princeton, N. J., not less than one month before the date of the examinations.

FROM HIGHER INSTITUTIONS†

An applicant for advanced standing may be considered for admission upon the presentation of satisfactory credentials from an accredited institution of higher learning. The student must be in good standing as

* A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods of prepared classroom work.

† The University reserves the right to refuse advance credit in whole or in part, or to allow it provisionally. Credit so given may be withdrawn for subsequent poor work.

to scholarship and conduct, and must be eligible to return to the previously attended institution in the term for which he seeks admission to this University.

If the transcript of record from such an institution includes the record of his secondary school work, it is not necessary for the applicant to have forwarded a separate record directly from the principal of the secondary school. High school work is considered only as fulfilling entrance requirements; it is never credited toward advanced standing.

Properly certified courses taken at accredited colleges or universities may be applied toward a degree at this University, subject to the curriculum requirements and regulations of the school or college to which admission is sought. Work of low pass grade (such as *D* or the equivalent) will not be considered for transfer.

ENTRANCE REQUIREMENTS

THE JUNIOR COLLEGE

An acceptable certificate of graduation from an accredited secondary school, or the satisfactory passing of College Entrance Board examinations selected with the approval of the Director of Admissions is required. (See "Methods of Admission".)

Distribution of Units for All Curricula.—Certification by the principal that the student has satisfied all curriculum requirements of the school will be accepted in lieu of any prescribed distribution of units. Attention is called, however, to the necessity of completing stated prerequisite studies during the secondary school period for admission to certain curricula. It is to be noted that one unit of algebra is prerequisite to courses in chemistry, mathematics, physics, and statistics, and that in addition one unit of plane geometry is prerequisite to courses in mathematics and physics. In the instance of applicants who do not meet the above stated mathematics requirements, algebra and plane geometry may be taken without college credit when offered by the Department of Mathematics. For a statement of the foreign language requirements see page 59.

A desirable secondary school program in preparation for college would include: four years of English, four years of foreign language (preferably one language rather than two), two years of natural or physical science with laboratory instruction (and over and beyond the so-called "General Science"), two or three years of social studies (with concentration on history), one or two years of basic mathematics.

COLUMBIAN COLLEGE (THE SENIOR COLLEGE)

For the Bachelor's Degrees

Two years of Junior College work leading to the degree of Associate in Arts, or the lower-division work in institutions not organized on the

junior-senior-college plan, following a specified curriculum, meet the minimum requirements of Columbian College. In addition, however, scholarship requirements for admission may be set somewhat higher than those for graduation from the Junior College.

Bachelor of Arts.—An Associate in Arts degree based on the *Arts and Letters* curriculum in the Junior College, or the equivalent (see page 60), is required.

Bachelor of Science.—An Associate in Arts degree based on the *Science* curriculum in the Junior College, or the equivalent (see pages 60-61), is required.

For the Master's Degrees

An approved Bachelor's degree from an accredited higher institution is required. A student from an unaccredited institution may be admitted at the discretion of the Committee on Admission and Advanced Standing, but he will be required to take such extra work above the minimum requirements as may be prescribed. An appropriate distribution of courses and a superior quality of work in the major field are essential.

Applications for admission must be approved by the department or division and by the Dean.

Master of Arts.—The student's undergraduate curriculum must have included a program of study substantially equivalent to the Bachelor of Arts major in his chosen field at this University.

Master of Science.—The student's undergraduate curriculum must have included the equivalent of the undergraduate major at this University of the scientific department under which he desires to work.

THE GRADUATE COUNCIL

Doctor of Philosophy.—The student must possess an adequate academic preparation for advanced study in the proposed field, as evidenced by approved Bachelor's and Master's degrees, or the equivalent, together with acceptable personal qualities and capacity for creative work.

THE SCHOOL OF MEDICINE

Doctor of Medicine.—Ninety credit hours of work, exclusive of physical education, in an accredited higher institution are required, as follows:

1. Chemistry, sixteen credit hours as follows: (a) eight credit hours in general inorganic chemistry, of which at least four credit hours are laboratory work (qualitative analysis may be counted as general inorganic chemistry); (b) eight credit hours or a one-year college course of organic chemistry, including laboratory work.

2. Physics, eight credit hours, of which at least two credit hours are laboratory work. It is recommended that this course be preceded by one in trigonometry.

3. Biology, eight credit hours, of which at least four credit hours are laboratory work. This requirement may be satisfied by a course of eight credit hours in either general biology or zoology, or by four credit hours each in zoology and botany but not by botany alone.

4. English composition and literature, six credit hours; the usual introductory college course or the equivalent. The student should develop facility in speaking and writing English.

5. Modern foreign language: a reading knowledge, preferably of French or German.

6. Electives. It is recommended that the remaining credit hours required include: (a) comparative vertebrate anatomy; (b) qualitative and quantitative chemical analysis; (c) social science and psychology.

Advanced Standing

A student who has satisfactorily completed one or two years at any other medical school approved by the American Medical Association, and who has the necessary preliminary educational requirements, may be admitted to advanced standing.

THE LAW SCHOOL

For the Degrees of Bachelor of Laws and Juris Doctor

Bachelor of Laws.—A Bachelor of Arts or equivalent degree awarded upon completion of a four-year course in an approved college or university is required. All pre-legal work must be of satisfactory quality and distribution. No student will be admitted who has been in attendance at another law school and who is ineligible to return to that school in good standing. From the applicants, a selection will be made by the Committee on Admissions.

Juris Doctor.—A student does not register as a candidate for this degree until his last year in the Law School. For details, see page 114.

ADVANCED STANDING

Advanced standing toward the degree of Bachelor of Laws will be granted only for work successfully completed in other law schools which are members of the Association of American Law Schools.

Advanced standing will not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their course at this Law School must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this School.

Advanced standing toward the degree of Juris Doctor will not be granted.

For the Graduate Degrees

*Master of Laws.**—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from a member school of the Association of American Law Schools are required. Candidates for admission must have attained an average grade on all work done for the Bachelor of Laws degree equivalent to the relative position of a *B* average in the standards of grading at this Law School, except that, in the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative.

Master of Comparative Law and Master of Comparative Law (American Practice).—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or sciences, equivalent to graduation from a gymnasium, lycée, or liceo; and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree, earned with high rank, from a member school of the Association of American Law Schools, and outstanding capacity for scholarly work in the field of law.

Unclassified Students

A person who is in good standing as a degree candidate in another law school which is a member of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student in order to earn credits for transfer to the other law school.

A person who is a member of the bar or a person, not a member of the bar, who is a graduate of a member school of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student.

Unclassified students are required to participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at this Law School.

THE SCHOOL OF ENGINEERING

For the Bachelor's Degrees

Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering.
—An acceptable certificate of graduation from an accredited secondary

* Satisfactory completion of one-half the work required for graduation from an accredited college satisfies the pre-legal admission requirement if the applicant served not less than 20 continuous months in the U. S. armed forces during World War II prior to September 1948.

school, or the satisfactory passing of College Entrance Board examinations in secondary school subjects selected with the approval of the Director of Admissions is required.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

ADVANCED STANDING

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be assigned by the School of Engineering to the extent that the work taken at previous institutions meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work.

For the Master's Degree

Master of Science in Engineering.—A Bachelor's degree in engineering from a recognized institution and evidence of capacity for productive study. Admission by examination may be permitted in exceptional cases.

THE SCHOOL OF PHARMACY

For the Bachelor's Degree

Bachelor of Science in Pharmacy.—An Associate in Arts degree based on the curriculum in *Pharmacy* in the Junior College (see page 61), or the equivalent is required.

A student who has received a Bachelor's degree from an accredited institution or who has completed work in the general cultural or foundational subjects of the pharmacy curriculum may be admitted to advanced standing. No more than one year of advanced standing will be granted a student from any institution other than an accredited college of pharmacy.

For the Master's Degree

Master of Science in Pharmacy.—A Bachelor of Science degree from an accredited institution is required. A superior record and professional promise are essential.

THE SCHOOL OF EDUCATION

For the Bachelor's Degrees

Bachelor of Arts in Education, Bachelor of Science in Home Economics, Bachelor of Science in Physical Education.—An Associate in Arts degree based on the *Education, Home Economics, or Physical Education* curriculum in the Junior College (see pages 62-63), or the equivalent from another accredited higher institution, or a certificate of graduation from an approved normal school or the equivalent is required.

For the Master's Degree

Master of Arts in Education.—To be admitted to candidacy for the degree of Master of Arts in Education the applicant must: (1) hold a Bachelor's degree from an accredited institution; (2) have an undergraduate quality-point index of 2.50 or above (C + average); (3) have demonstrated a genuine interest in teaching; (4) be in possession of personality traits that give promise of better-than-average success as a teacher.

To be admitted to candidacy in programs designed to prepare for service in guidance and administration two years of successful teaching experience are prerequisite.

For the Doctor's Degree

Doctor of Education.—The degree of Master of Arts in Education, or the equivalent, and at least three years of satisfactory educational experience are required.

THE SCHOOL OF GOVERNMENT

For the Bachelor's Degree

Bachelor of Arts in Government.—An Associate in Arts degree based on the *Foreign Affairs, Accounting, Business Administration, or Statistics* curriculum in the Junior College (see pages 64-65), or the equivalent.

For the Master's Degrees

A Bachelor's degree from an accredited college or university is required. A student from an unaccredited institution may be admitted at the discretion of the Dean's Council, but will be required to take such extra work above the minimum requirements as may be prescribed.

A student admitted to candidacy must have attained a quality-point index of 3.00 (a B average) in his undergraduate major. An applicant whose scholastic average is below 3.00 in his major, or who lacks pre-

requisite courses, may be referred to the Division of Special Students to make up the deficiency.

Master of Arts in Government.—The applicant's undergraduate program must have included prerequisite courses, corresponding to an undergraduate major at this University, for the chosen field of graduate study.

Master of Arts in Public Administration.—An undergraduate major in a social science field appropriate to the chosen field of advanced work in public administration is required.

Master of Arts in Personnel Administration.—An undergraduate major in a social science or education, with the appropriate courses in psychology, is required.

Master of Business Administration.—An acceptable undergraduate major in Business Administration, or the equivalent, is required. Applicants who are deficient in such course work may be admitted and will be required to make up deficiencies over and above the normal Master of Business Administration program.

For the Doctor's Degree

Doctor of Business Administration.—A Master's degree in Business Administration or a related field, or the equivalent, and proficiency in statistics and accounting to the satisfaction of the Committee on Doctoral Studies are required.

THE COLLEGE OF GENERAL STUDIES

For information concerning the College of General Studies, see pages 178-80.

THE DIVISION OF UNIVERSITY STUDENTS

Students 21 years of age or over who are not interested in working for a degree in this University may be considered for admission to the Division of University Students to take courses for which they have adequate preparation, as evidenced by previous scholastic records.

In special instances, with the permission of the instructor, a person may be considered for admission as an auditor in a class without being required to take active part in the exercises or to pass examinations, but no credit will be allowed for such attendance.

THE DIVISION OF SPECIAL STUDENTS

This is a non degree-granting division of the University in which the Director of Admissions may authorize the placement of students in the process of making up entrance deficiencies to degree-granting colleges and schools of the University.

Complete credentials must be submitted and evaluated before a tentative or definite plan of make-up may be prepared.

THE DIVISION OF AIR SCIENCE

The applicant must be a regularly enrolled, full-time, male student; a citizen of the United States; between the ages of 14 and 25; physically qualified; of good character; and a candidate for a degree.

CLASSIFICATION OF STUDENTS

Regular Students.—Regular students are those who have met the entrance requirements for candidacy and are registered for degrees.

University Students.—Persons of mature age, as specified in the rules of the Division of University Students, may be admitted to this Division to pursue courses for which they have had adequate preparation.

Special Students.—Special students are those who are in the process of qualifying for admission to curricula in degree-granting colleges and schools of this University.

Additional information concerning curricula, courses offered, entrance requirements, or admission procedure may be obtained from the Office of the Director of Admissions.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified for entrance to the University. (See "Admission", pages 12-21.)

A student who has previously matriculated in the University, but who has not been in attendance during the term prior to registration, should file an application for readmission in advance of registration.

Registration is for the term unless otherwise indicated on the registration paper. No registration is accepted for less than a term or one summer session.

A student may not register concurrently in The George Washington University and another institution without the permission of the dean of the college, school, or division in which he is registered in The George Washington University. Allowance of credit for work done concurrently will be at the discretion of the appropriate Committee on Admission and Advanced Standing.

TIME AND PLACE OF REGISTRATION

Registration for all colleges, schools, and divisions except as noted below is conducted in Building C, 2029 G Street NW., during the following periods: *fall term*, September 24 and 25; *spring term*, February 4 and 5.

For the Law School: Stockton Hall, 720 Twentieth Street NW.: *fall term*, September 24 and 25; *spring term*, February 4 and 5.

For the School of Medicine: School of Medicine, 1335 H Street NW., between 9:00 a.m. and 4:00 p.m., September 17 and 18.

For the College of General Studies: at times and places designated in individual course announcements.

REGISTRATION CHANGES AND WITHDRAWALS

For regulations governing changes in registrations and withdrawals, see pages 24, 42-43.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted, effective September 1, 1953:

TUITION FEES

For each credit hour* for which the student registers (except work in the Law School, work toward the Master's degree in Engineering, and work taken by a candidate for a Doctor's degree).....	\$15.00
For each credit hour for which the student registers in the Law School	17.00
For the degree of Doctor of Medicine, for two terms†.....	850.00
For the degree of Doctor of Philosophy, Doctor of Education, or Doctor of Business Administration:	
For work§ leading to and including the Council Fellowship or General examination|| .....	450.00
For work leading to and including the final examination||.....	450.00
For the degree of Doctor of Juridical Science:	
For work leading to and including the final examination||.....	450.00
For the degree of Master of Science in Engineering:	
For work leading to and including the Comprehensive Examination	550.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the term and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEES

Wherein the degree of Associate in Arts is granted.....	\$10.00
Wherein a degree other than the Associate in Arts degree is granted	20.00
FEE FOR BINDING MASTER'S THESIS.....	5.00
FEE FOR THE PROFESSIONAL THESIS IN THE SCHOOL OF ENGINEERING....	75.00
An annual fee; one half payable in advance at the time of each registration.	

* Payment of tuition for a Master's thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the second academic year, it must be registered for again, and tuition paid on the same basis as for a repeated course.

† Registration in the School of Medicine is for a period of two terms. After the student has entered the course of instruction he is obligated for the full tuition for two terms. No part of the tuition will be refunded upon withdrawal or dismissal for any cause.

§ This fee does not cover the cost of tuition for elementary courses (numbered 1 to 100), for French 107, or German 107.

|| When a limited schedule is carried which extends the time of either the preparation period or the examination period to more than one year, the proportionate part of the charge may be fixed by the Treasurer.

FEE FOR PRINTING AND FILING SUMMARY OF DOCTORAL DISSERTATION.... \$75.00

SPECIAL FEES

Application fee, charged each applicant for admission (except applicants to the School of Medicine), non-refundable.....	3.00
Application fee, charged each applicant for admission to the School of Medicine, non-refundable.....	5.00
Scholastic-aptitude Test (when required for admission).....	3.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees").....	1.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student wishing to maintain "in residence" status during any term of absence from the University or after completion of tuition requirements:	
In the Law School.....	17.00
In all other colleges, schools, and divisions.....	15.00
For special physical examination.....	2.00
Student Bar Association fee, charged each student in the Law School for each term or any part thereof except the summer term.....	2.50
Engineers' Council fee, charged each student in the School of Engineering for each term or any part thereof except the summer term	1.50
For each examination to qualify for advanced standing and for each special examination	5.00
Laboratory checkout fee, charged each student in chemistry and pharmacy courses who fails to check out of the laboratory by the time set by the instructor.....	2.00
Transcript fee, charged for each transcript of record after the first...	1.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under Health Administration, pages 191-92. These privileges, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Treasurer, the student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 3.

Spring Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due, but who pays his fees on or before the fifteenth of the month in which payment is due, is charged a service fee of \$1. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the dean of the college, school, or division in which the student is registered. Notification to an instructor is not an acceptable notice (see "Withdrawal", pages 42 and 43).

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and is cancelled before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$2. A student who drops a course before the end of the term must check out of the laboratory at the next regular laboratory period.

Any student enrolled in the Air Force ROTC who fails to turn in uniforms, equipment, and textbooks, on separation from the Corps, will be charged the value of the missing items.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, FINANCIAL AID

FELLOWSHIPS

The following fellowships are available to graduate students. Applications should be submitted for consideration not later than April 1 preceding the period for which the fellowship is to be awarded.

The applicant for a University Teaching Fellowship or a Special Fellowship is expected to be a prospective candidate for the degree of Doctor of Philosophy, and to have the Master of Arts degree, or the equivalent, in the general field of his future doctoral study and research. Forms on which to make application for these fellowships may be obtained from the Chairman of the Graduate Council.

University Teaching Fellowships.—These are assigned for the academic year in the following departments of instruction: Bacteriology, Biochemistry, Botany, Chemistry, Economics, English, History, Physics, Psychology, Romance Languages, and Statistics. Each fellow receives an annual stipend, plus full tuition in the Graduate Council for whatever schedule of study or research his fellowship duties permit him to carry. The occupant of each of these fellowships renders a designated unit of service to the department of instruction in his major field of doctoral study, usually in classroom or laboratory assignments.

Law School Teaching Fellowships.—A limited number of teaching fellowships are available each year in the Law School to prospective candidates for the Master of Laws degree. Each fellow receives an annual stipend, plus tuition for the academic year. The occupant of each of these fellowships follows an approved program of study and research, assists members of the Faculty in the guidance of first year students, and supervises student work in legal bibliography and the drafting of legal instruments. Upon satisfactory completion of the year's work, a fellow is recommended for the degree of Master of Laws. Applications should be submitted to the Dean of the Law School not later than March 1 preceding the period for which the fellowship is to be awarded.

Special Fellowships.—Special fellowships are supported by endowment, and are awarded to doctoral students of unusual promise and ability. The stipend is not fixed but varies in amount with the need of the individual receiving the award. In applying for one of these fellowships it is advantageous that the student appear personally for an interview with the Chairman and such other members of the Graduate Council as would be interested in the research investigations proposed. These fellowships include the following:

Isabella Osborn King Research Fellowships.—Two fellowships of the value of \$1,500 each, offered annually in the general field of biology, and intended to foster research for which the libraries and scientific establishments in Washington provide special facilities.

Thomas Bradford Sanders Fellowships.—Established in 1928 by Miss Addie Sanders in memory of her brother, Thomas Bradford Sanders, and offered in various academic fields of study, with stipends designated by the Chairman of the Graduate Council.

Soroptimist Fellowship.—This fellowship of \$750 was established in 1948 by the South Atlantic Region of the American Federation of Soroptimist Clubs, an international organization of executive business and professional women. It is available to a woman who holds a baccalaureate degree and who wishes to undertake graduate work to prepare herself for professional service. Selection of the candidate will be based upon the personal and academic qualifications of the applicant. Application should be addressed to the Registrar of the University.

SCHOLARSHIPS

Scholarships are awarded for two terms unless otherwise specified and are credited in equal parts for each term. Each holder must carry a full schedule of academic work (fifteen credit hours or in the professional schools the full prescribed schedule) during the period for which the scholarship is awarded. Applicants* must have established an academic record in courses at this institution, and should apply on prescribed forms which must be filed in the Office of the Chairman of the Committee on Student Loans and Scholarships not later than April 1 preceding the academic year for which the scholarship is to be awarded. Further information may be obtained from the Chairman of the Committee on Student Loans and Scholarships.

Alpha Zeta Omega Scholarship.—This scholarship in the amount of \$500, was established by Pi Chapter of Alpha Zeta Omega Pharmaceutical Fraternity. It is awarded annually to a member of the graduating class of one of the public high schools of the District of Columbia who intends to enroll in the Junior College Pharmacy Curriculum and to continue in the School of Pharmacy, completing the work leading to the degree of Bachelor of Science in Pharmacy.

Alumni Scholarships.—Five scholarships are available each year in the Junior College, upon the recommendation of regional alumni clubs, to outstanding male graduates of accredited high schools. The scholarships

* Except in the case of the Alpha Zeta Omega Scholarship, the Alumni Scholarships, the Daughters of the American Revolution Scholarship, School of Engineering Scholarships, the High School Scholarships, the Kappa Alpha Theta Scholarship, the Law School Scholarships, the Eugene and Agnes E. Meyer Scholarships, the National League of Masonic Clubs Scholarship, the John O. Rankin Scholarship, and the Student Activities Scholarships.

cover tuition costs for four terms (beginning with the fall term) of full-time work but do not include special fees such as laboratory charges, room, board, or other expenses. To retain the scholarship, the student must maintain a *B* average. Additional information may be obtained from the Executive Secretary of the General Alumni Association.

American Foundation for Pharmaceutical Education Scholarship.—A scholarship fund, in the amount of \$400, established by the American Foundation for Pharmaceutical Education, is available annually to junior and senior students of the School of Pharmacy who are in the upper quarter of their class or who are maintaining average grades of not less than *B*. The scholarship funds are awarded on the recommendation of the Committee on Scholarship of the School of Pharmacy.

Byron Andrews Scholarship.—This scholarship, in the amount of \$150, established in 1920 by Mrs. Belle Fisk Andrews in memory of her husband, Byron Andrews, is available "for ambitious and needy students, who desire to pursue courses in English, Latin, journalism, history, literature, or political science".

Anna Bartsch Scholarship.—This scholarship, in the amount of \$500, established in 1946 by Dr. Anna Bartsch-Dunne, as a memorial to her mother, Anna Bartsch, is available to a woman in the School of Medicine, "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession". The award is made upon the recommendation of the Faculty of the School of Medicine.

Emma K. Carr Scholarships.—Six scholarships in the amount of \$390 each and eight of \$100 each, established in 1932 by Mrs. Emma K. Carr, are available to "young men (of the white race) for undergraduate or postgraduate work, considering character, capacity, and need".

Henry Harding Carter Scholarship.—This scholarship, in the amount of \$400, established in 1896 by Mrs. Maria M. Carter in memory of her husband, Henry Harding Carter, is available to a deserving student who is preparing for the civil-engineering profession.

Maria M. Carter Scholarship.—This scholarship, in the amount of \$100, established in 1871 by Mrs. Maria M. Carter, is available to a young man.

Daughters of the American Revolution Scholarship.—This scholarship, in the amount of \$350, established in 1952 by the District of Columbia Daughters of the American Revolution, is available to descendants, preferably female, of patriots of the American Revolution.

Isaac Davis Scholarship.—This scholarship, in the amount of \$75, was established in 1869 by the Honorable Isaac Davis of Massachusetts. Nominations for the scholarship may be made "by the founder or his eldest lineal descendant". In case no such nomination is made, the scholarship is to be awarded by the University.

Charles Worthington Dorsey Memorial Scholarship.—This scholar-

ship, established in 1947 as a memorial to Charles Worthington Dorsey, Bachelor of Laws, '81, Master of Laws, '82, is awarded upon the recommendation of the Faculty of the Law School to a needy and promising graduate of Columbian College or other division of the University, with a Bachelor of Arts or other equivalent degree, who has maintained an average of *B* as an undergraduate student and who desires to pursue the study of law as a full-time student. The scholarship covers tuition for the course leading to the first degree from the Law School, Bachelor of Laws or Juris Doctor, provided that the holder maintains an average of *B*. The right is reserved to suspend the benefits of the scholarship for cause at any time. This scholarship is awarded ordinarily once every three years.

School of Engineering Scholarships.—Four scholarships, established in 1952, are available each year in the School of Engineering to graduates of accredited secondary schools. Each scholarship provides full tuition for one year. The holders of these scholarships must carry a full program in the School of Engineering.

Robert Farnham Scholarship.—This scholarship, in the amount of \$75, given to the University in 1871 by Mrs. Robert Farnham, is available to a student in Columbian College.

Anna Spicker Hampel Scholarship.—This scholarship, in the amount of \$30, established in 1949 by Mrs. Evelyn Hampel Young, is available for scholarship aid to young married women students in the School of Education or Columbian College.

Elma Lewis Harvey Scholarship.—This scholarship of \$100 was founded in 1921 by Mrs. Emma Elizabeth Harvey in memory of her daughter, and is awarded every four years, or as often as vacant, to a young woman in Columbian College of the Protestant faith and the Caucasian race who shall be selected for scholarship and moral qualifications.

Hazleton Scholarship.—This scholarship, in the amount of \$300, established in 1950 by the bequest of Lillie S. Hazleton, is awarded annually "for the use and assistance of needy and worthy students".

High School Scholarships.—The Board of Trustees of the University offers the following scholarships for study in the liberal arts to graduates of public high schools of the District of Columbia and near-by Maryland and Virginia. District of Columbia: Anacostia, Coolidge, Eastern, McKinley, Roosevelt, Western, and Woodrow Wilson high schools—two scholarships each (The Amos Kendall Scholarship, established by the late Honorable Amos Kendall, is one of the two assigned to Western High School.); Montgomery County, Maryland—four scholarships; Prince Georges County, Maryland—four scholarships, Alexandria County, Virginia—two scholarships; Arlington County, Virginia—four scholarships. Scholarships are divided equally between men and women.

Each scholarship is awarded annually to a member of the graduating class who plans to enter the Junior College and continue in Columbian College, completing the work leading to a Bachelor's degree. A principal and an alternate may be recommended. The principal or, if the principal declines, the alternate must register the following September.

The holders of these scholarships are exempt from tuition fees, but are charged laboratory, graduation, and other fees. The scholarships are valid for four academic years of undergraduate study.

To retain any high school scholarship, a student must carry a full program of study in the liberal arts (a full program being defined as at least fifteen hours of work each term). An average of *B* and a high standard of deportment must be maintained. Scholarships are reassigned annually. If the holder fails to continue its use during the academic year, the scholarship will not be reassigned.

High School Discussion Conference Scholarships.—Three scholarships are available each year in the Junior College to high school seniors who participate in the George Washington University High School Discussion Program. These scholarships cover tuition for one year, but do not include laboratory fees or other special fees. For information concerning application, consult the Department of Speech.

Kappa Alpha Theta Scholarship.—This scholarship, in the amount of \$500, established by the Washington alumnae of Kappa Alpha Theta, is available for the training of a clinician in speech correction.

Kappa Psi Scholarship.—This scholarship, in the amount of \$75, was established in 1952 by Gamma Tau Chapter of Kappa Psi Pharmaceutical Fraternity. It is awarded annually to a student in the School of Pharmacy who is in need of financial aid.

Law School Scholarships.—Seven scholarships are available each year in the Law School to graduates of accredited colleges. Each scholarship provides full three-years' tuition in the morning division of the Law School. Candidates must have graduated in the upper fifth of their class and must have demonstrated qualities of leadership in addition to scholastic attainment. To retain the scholarship, the successful candidate must maintain a *B* average. Application must be made before February 1 to the Dean of the Law School.

Eugene and Agnes E. Meyer Scholarships.—A scholarship fund, in the amount of \$2,500, established in 1952 by the Eugene and Agnes E. Meyer Foundation, is available annually "to assist promising students or applicants in meeting the costs of furthering their education, with preferential consideration to children of persons who are employed in public service, including service in the armed forces or the judiciary."

A. Morehouse Scholarship.—This scholarship was established by Mr. A. Morehouse in 1861. It carries an annual stipend of \$200, which is

available for an undergraduate "intending to enter the Christian ministry".

The National League of Masonic Clubs Scholarship.—This four-year scholarship, in the amount of \$400 annually to be applied toward payment of tuition costs only, is offered by the National League of Masonic Clubs to the son or daughter of a Master Mason. To continue to hold the scholarship, the student must maintain a satisfactory academic record.

Newspaper Scholarships.—One scholarship is available each year to a candidate recommended by each of the following newspapers: *The Washington Daily News*, *The Washington Post*, *The Evening Star*, and *The Times-Herald*. The holder of the scholarship must be an employee of the newspaper. These scholarships cover tuition for four years, but do not include laboratory fees, graduation fees, or other special fees.

Panhellenic Association of Washington, D. C., Scholarship.—A scholarship, in the amount of \$200 to be applied to tuition fees, has been established by the Panhellenic Association of Washington, D. C. This scholarship is available for the academic year of 1953-54 to a woman student in her sophomore or junior year, who is a member of the National Panhellenic Conference, has done the most to promote good social relations among the sororities on the campus, is an outstanding leader in student affairs sponsored by the University, and has a 2.5 (C+) or better average.

Paul Pearson Scholarship.—This scholarship, in the amount of \$200, established in 1940 by bequest of Paul Pearson and "to be known as the Dr. Paul Pearson award", is available to a student in the School of Pharmacy, upon the recommendation of the Faculty of that School.

John O. Rankin Scholarship.—This scholarship, established in October 1951 in recognition of Mr. Rankin's bequest to the University, is to be awarded to a resident of Pemiscot County, Missouri, upon the recommendation of the Caruthersville Rotary Club and the Hayti Lions Club in this County. The scholarship covers tuition costs for the four-year curriculum in Foreign Affairs, but it does not include laboratory fees, graduation fees, or other special fees. To retain the scholarship, the recipient must carry a full program and maintain an average of B. The scholarship is awarded every four years or as often as vacant. Further information may be obtained from the Office of the President of the University.

Lula M. Shepard Scholarships.—Two scholarships, in the amount of \$420 and \$280, respectively, established in 1946 by bequest of Lula M. Shepard, are available to "worthy Protestant students desiring to enter the Foreign Service Department of the School of Government".

David Spencer Scholarship.—This scholarship of \$150, established in 1918 by Miss Louisa J. Spencer, is available under certain restrictions.

Mary Lowell Stone Scholarship.—This memorial scholarship, in the

amount of \$200, established in 1893, is available to a woman student of science in Columbian College.

Student Activities Scholarships.—The University has established a limited number of Activities Scholarships for men, which are awarded to approved applicants by the Faculty Committee on Student Loans and Scholarships upon the basis of (1) need, (2) good character, (3) demonstrated aptitude for leadership, and (4) scholarship.

Such scholarships are granted for one academic year. They may be continued, however, upon the basis on which they were granted. Recipients of Activities Scholarships must maintain the required scholastic average of the school or division in which they are registered.

The time for filing applications for Activities Scholarships and the terms of such scholarships may be ascertained by inquiry at the office of the Chairman of the Committee on Student Loans and Scholarships.

Charles Clinton Swisher Scholarship.—This scholarship, in the amount of \$390, established in 1941 by Professor Charles Clinton Swisher, is available to a student of medieval history.

William Walker Scholarship.—This scholarship, established in 1824 by William Walker, Esq., carries an annual stipend of \$300, which is available for an undergraduate intending to enter the Christian ministry.

John Withington Scholarship.—This scholarship of \$150 was established in 1830 by the New York Baptist Theological Seminary.

Ellen Woodhull Scholarship.—This scholarship of \$50, established by Ellen M. E. Woodhull, is available to a student in Columbian College.

The Zonta Club of Washington, D. C., Scholarship.—This scholarship, in the amount of \$300, offered by the Zonta Club of Washington, D. C., is available to a woman who is a senior or graduate student with special interest in a professional or business career.

THE COLUMBIAN WOMEN SCHOLARSHIP FUNDS

The Columbian Women Scholarships are awarded by the Scholarship Committee of the Columbian Women. Applications for these scholarships should be addressed to the Chairman of the Scholarship Committee, the Columbian Women, The George Washington University, Washington 6, D.C., not later than May 15 preceding the academic year for which the scholarship is to be awarded, or, in the case of award for the spring term, not later than January 1.

Nellie Maynard Knapp Scholarship Fund.—The income from this fund of \$5,000, established in 1915 in memory of a former president, Mrs. Martin A. Knapp, is available for scholarships for women.

Founders of Columbian Women Scholarship Fund.—The income from this fund of \$5,000, established in 1920, is available for scholarships.

Lillian Young Herron Scholarship Fund.—The income from this fund

of \$5,000, established in 1925 and named in 1930 in memory of a former president, is available for scholarships.

Elizabeth V. Brown Scholarship Fund.—This fund of \$1,200 was established in 1925 by the College Women's Club of Washington, D.C., in memory of the late Elizabeth V. Brown. The income is available for a scholarship for a woman student in the School of Education.

College Women's Scholarship Fund.—The income from this fund of \$500, established in 1926 by the College Women's Club of Washington, D.C., is available for scholarship aid.

Lewes D. and Myrtie H. Wilson Memorial Scholarship Fund.—This fund of \$1,000 was established by Miss Elizabeth Wilson in 1926 as a memorial to her parents, Lewes D. and Myrtie H. Wilson. The income is available for a scholarship in the School of Medicine.

Grace Ross Chamberlin Scholarship Fund.—The income from this fund of \$2,300, established in 1932 in honor of a former president, is available for scholarship aid.

PRIZES

Alpha Chi Sigma Prizes.—Alpha Pi Chapter of Alpha Chi Sigma Fraternity offers annually the following prizes:

A "Handbook on Chemistry and Physics" is awarded to each of the three students who carry at least eighteen credit hours during the freshman year and attain the highest averages in freshman chemistry.

The name and year of graduation of the student who has attained the highest quality-point index in courses in chemistry will be inscribed on a bronze plaque. The winner must have had at least sixteen hours of chemistry including the final term at The George Washington University.

Alpha Delta Pi Prize.—Alpha Pi Chapter of Alpha Delta Pi Fraternity offers an annual prize of \$10 to the woman member of the junior class with the most outstanding record in scholarship, extra-curricular activities, and service to the University.

Alpha Kappa Psi Prize.—Beta Mu Chapter of Alpha Kappa Psi Fraternity awards annually a key to the male student who has completed ninety credit hours at The George Washington University and has attained the highest average grade in economics, business administration, public accounting, public finance, and foreign commerce.

Alpha Zeta Omega Prize.—The Ladies' Auxiliary, Pi Chapter, of the Alpha Zeta Omega Pharmaceutical Fraternity offers annually a copy of *The United States Dispensatory* to the freshman student in pharmacy, who has completed at least fifteen hours in the University and who has attained the highest average in his courses.

American Institute of Chemists Prize.—The District of Columbia Chapter of the American Institute of Chemists offers an annual prize of a medal and junior membership in the American Institute of Chemists

to that graduating student, majoring in chemistry, who excels in scholarship and in the personal qualities of integrity and leadership.

Byrne Thurtell Burns Memorial Prize.—This prize of \$75 is awarded to the senior majoring in chemistry who shows the greatest proficiency in organic chemistry, as evidenced by a comprehensive examination, and who possesses such qualifications of mind, character, and personality as to give promise of future achievement.

Martin L. Cannon Memorial Prize.—Pi Chapter of the Alpha Zeta Omega Pharmaceutical Fraternity offers annually a copy of *The United States Dispensatory*, in memory of Dr. Martin L. Cannon, to the student in pharmacy receiving his Associate in Arts degree, who throughout his course has obtained the highest grades and at the same time contributed most to the student activities in the School of Pharmacy.

Chi Omega Prize.—Phi Alpha Chapter of Chi Omega Fraternity offers annually a prize of \$25 to be awarded to the woman student in the graduating class with the highest record in the following social sciences: economics, sociology, political science, and history; combined with general excellence.

John Henry Cowles Prizes.—These prizes, founded in 1943 by John H. Cowles, Grand Commander of the Supreme Council of the Thirty-third Degree (Mother Council of the World) of the Ancient and Accepted Scottish Rite of Freemasonry, Southern Jurisdiction of the United States of America, are awarded annually to the best two scholars in the senior class of the School of Government. The prizes are as follows: first prize, \$100; second prize, \$50.

DeWitt Clinton Croissant Prize.—This prize of \$50, established by the late Professor DeWitt Clinton Croissant, is awarded annually to the undergraduate student who as a member of one of the University courses in drama or as a participant in University dramatics submits to the English Department the best essay on drama or the theatre.

E. K. Cutter Prize.—The E. K. Cutter Prize in English was established by the late Marion Kendall Cutter "for excellence in the study of English." An annual prize of \$60 is awarded to the member of the graduating class whose record in English, combined with general excellence, shows most marked aptitude for and attainment in English studies.

Daughters of the American Revolution Prize.—This prize, established by the Daughters of the American Revolution of the District of Columbia, consists of \$15, which is awarded annually to the student who, having maintained a record of distinction in American history, submits the best essay upon a topic in the period of the American Revolution.

Isaac Davis Prizes.—These prizes, established by the Honorable Isaac Davis, of Massachusetts, in 1847, are awarded annually to such members of the senior class as shall have made the greatest progress in public

speaking during their connection with the University. The prizes are as follows: first prize, \$25; second prize, \$20; third prize, \$15.

The award of these three prizes is determined by a public-speaking contest in which the participants deliver original orations. Only members of the senior class who are candidates for the degree of Bachelor of Arts or Bachelor of Science are eligible to compete.

Delta Zeta Prize.—Delta Zeta Sorority offers annually a prize of \$10 to be awarded to the student maintaining the highest average in Zoology 1-2.

Ellsworth Prize.—The Ellsworth Prize of \$25, established by the late Mr. Fritz von Briesen, is awarded to the student doing the best work in the subject of Patent Law Practice.

Elton Prize.—The Elton Prize of \$20, established by the Reverend Romeo Elton, of Exeter, England, is awarded annually to the senior student having the highest average in the Greek language and literature.

Jesse Frederick Essary Prize in Journalism.—This memorial prize of \$150, established in 1948 by the late Helen Essary Murphy, is awarded annually to a student who has given promise of sound citizenship and ability in "forthright reporting" in student publication and/or under the jurisdiction of the Department of Journalism. The selection of the recipient will be made by a committee composed of the President of the University and two members of the Faculty.

Joshua Evans III Prize in the Political and Social Sciences.—This memorial prize of \$60, "established by friends because of an outstanding life", is awarded annually to that man in the graduating class of The George Washington University "who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows". The selection of the recipient will be made by the President of the University and a committee from the Faculty of the Division of the Social Sciences.

Willie E. Fitch Prize.—The Willie E. Fitch Prize of \$75, established in 1883 by James E. Fitch, in memory of his son, is awarded annually to a senior student for the best examination in chemistry.

Alice Douglas Goddard Prize.—This prize of \$75 was established in 1941 by Frederick Joseph Goddard of Georgetown, D.C., in memory of Alice Douglas Goddard, and is awarded annually to the upper division student making the highest average in American literature.

Edward Carrington Goddard Prize.—This prize of \$75 was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D.C., in memory of Edward Carrington Goddard, class of '81, and is awarded to the junior or senior student making the highest average in the French language and literature.

James Douglas Goddard Prize.—This prize of \$75 was established

in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D.C., in memory of James Douglas Goddard, class of '01, and is awarded to the senior student making the highest average in pharmacy.

Morgan Richardson Goddard Prize.—This prize of \$75 was established in 1923 by Mary Williamson Goddard, Alice Douglas Goddard, and Frederick Joseph Goddard, of Georgetown, D.C., in memory of Morgan Richardson Goddard, and is awarded to the junior or senior student making the highest average in the following fields: economics, business administration, foreign commerce, and public accounting.

Gardiner G. Hubbard Memorial Prize in United States History.—This prize of \$60 was established by Mrs. Gertrude M. Hubbard in memory of her husband, the late Gardiner G. Hubbard, and is awarded annually to that member of the graduating class majoring in history who has maintained the highest standing in courses in United States history.

Kappa Kappa Gamma Prize.—Kappa Kappa Gamma Sorority offers annually a prize of \$10 to the full-time freshman who achieves the best record in Botany 1 and 2.

John Bell Larner Prize.—This prize, established by the bequest of John Bell Larner, consists of a medal which is awarded annually to that member of the graduating class in the Law School who attains the highest average grade in the entire course for the degree of Bachelor of Laws.

Mortar Board Prize.—This prize, consisting of a silver cup, is awarded annually to the woman student in the sophomore class having a scholarship average of B or higher and the most outstanding record in activities.

Omicron Delta Kappa Prize.—Alpha Delta Circle of Omicron Delta Kappa Fraternity offers annually a plaque to be awarded to "that member of the senior class who throughout his course has done the most constructive work in the furtherance and upbuilding of the University student activities".

John Ordronaux Prizes.—These prizes were established in 1909 by the bequest of John Ordronaux.

The amount of \$150 is awarded to the member of the graduating class in the School of Medicine who has the highest scholastic standing.

The amount of \$75 is awarded annually to the student in the Law School who has attained the highest average grade in the first year, full-time course; and \$75 to the student who has attained the highest average grade in the second-year, full-time course.

Phi Eta Sigma Prize.—The George Washington University Chapter of Phi Eta Sigma offers annually to the male student attaining the highest scholastic average in his first full term of work, a choice book selected from the field of the recipient's major interest. The winner's

name will be engraved on a plaque in the Office of the Dean of the Junior College.

Phi Sigma Kappa Prize.—Phi Sigma Kappa Fraternity offers annually a silver cup to the winner of an oratorical contest, open to all freshmen.

Pi Beta Phi Prize.—A prize of \$20 is awarded annually by the District of Columbia Alpha Chapter of Pi Beta Phi Fraternity to that woman member of the senior class who throughout her college course has done the most constructive work in the promotion of student activities among the women of the University.

Psi Chi Prizes.—The George Washington University Chapter of Psi Chi, national honorary society in psychology, offers annually two awards in the field of psychology; the first, \$25 to the best undergraduate student in Experimental Psychology; the second, \$25 to the graduate student submitting the best Master's thesis in Psychology.

Ruggles Prize.—The Ruggles Prize of \$35, established by Professor William Ruggles in 1859, is awarded annually to a candidate for a baccalaureate degree for excellence in mathematics.

Sigma Kappa Prize.—Zeta Chapter of Sigma Kappa Sorority offers an annual prize of \$10 to the student with the highest grade in the final examination in General Chemistry.

Sigma Tau Prize.—Xi Chapter of Sigma Tau Fraternity offers annually a medal to be awarded to that member of the freshman class in the School of Engineering who maintains the highest scholastic standing in the work of the entire year.

Society of Colonial Wars in the District of Columbia Prize.—This award, in the form of a gold medal, established in 1953 by the Society of Colonial Wars in the District of Columbia, is to be awarded to a candidate for a graduate degree who, in the judgment of the Faculty of the Department of History, submits a thesis or dissertation demonstrating excellence in historical research in American Colonial history. The University reserves the right to withhold the award if no thesis or dissertation attaining the required degree of excellence is submitted.

Staughton Prize.—The Staughton Prize of \$20, established by the Reverend Romeo Elton, is awarded annually to the senior student making the best record in the Latin language and literature.

James MacBride Sterrett, Jr., Prize.—This prize, established in 1911 by Professor James MacBride Sterrett in memory of his son, consists of books awarded annually to that student who obtains the highest average in Physics 6, 7, and 8.

Charles Clinton Swisher Historical Club Prize.—This prize of \$100, established in 1936 by the Charles Clinton Swisher Historical Club and augmented in 1941 by the bequest of Professor Charles Clinton Swisher, is awarded annually to the student who submits the best essay covering some phase of medieval history.

Theta Tau Activities Plaque.—Gamma Beta Chapter of Theta Tau Fraternity offers annually a plaque to be awarded to that member of the senior class who has the most outstanding record in activities in the School of Engineering during the entire period of his attendance.

Thomas F. Walsh Prize.—This prize of \$150, established in 1901 by Thomas F. Walsh, is awarded annually to that student who submits the best essay in Irish history.

Alexander Wilbourne Weddell Prize.—This prize of \$350, established in 1923, by Mrs. Virginia Chase Weddell, is awarded annually to a candidate for a degree who writes the best essay on the subject of "the promotion of peace among the nations of the world". The prize essays shall become the property of the University and shall not be printed or published without the written consent of the University. The University reserves the right to withhold the award if no essay attaining the required degree of excellence is submitted.

MILITARY AWARDS

Air Force Association Silver ROTC Medal.—This medal, offered by the Air Force Association, is awarded annually to that Air Force Cadet of the senior class who, after completion of summer camp, is judged to be the outstanding cadet among those physically qualified for flying training who have indicated their intention to apply for such training upon graduation.

Reserve Officers' Association Gold ROTC Medal.—This gold medal, offered by the Reserve Officers' Association of the District of Columbia, is awarded annually to the Air Force ROTC Cadet of the junior class with the highest grades in the leadership and academic phases of the Air Force ROTC course for the current year.

Reserve Officers' Association Silver ROTC Medal.—This silver medal, offered by the Reserve Officers' Association of the District of Columbia, is awarded annually to that Air Force ROTC Cadet of the sophomore class with the highest grades in the leadership and academic phases of the Air Force ROTC course for the current year.

Reserve Officers' Association Bronze ROTC Medal.—This bronze medal, offered by the Reserve Officers' Association of the District of Columbia, is awarded annually to that Air Force ROTC Cadet of the freshman class with the highest grades in the leadership and academic phases of the Air Force ROTC course for the current year.

Reserve Officers' Association Junior Memberships.—Five junior memberships, offered by the Reserve Officers' Association of the District of Columbia, are awarded annually to the five Air Force ROTC Cadets of the junior class who obtain the highest grades for the first term in the academic phase of the Air Force ROTC course, Air Science III (101).

Pershing Rifles Achievement Medals.—These medals offered in gold, silver, and bronze are awarded periodically by the National Headquarters of the Pershing Rifles to those active Pershing Riflemen in the Advanced ROTC course who are judged by their cadet officers, faculty administration, and the Professor of Air Science and Tactics to be outstanding examples of the ideals of the Pershing Rifles.

FINANCIAL AID

INTERNSHIP

In memory of her mother, Anna Bartsch, Dr. Anna Bartsch-Dunne established in 1946 a fund to aid in the support of an internship. This aid, in the amount of \$15 a month, is awarded annually to a woman holding an internship in the University Hospital.

LOAN FUNDS

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Inquiries should be directed to the Office of the Treasurer.

University Loan Fund.—The Trustees of The George Washington University have established a loan fund of \$10,000.

Home Economics Loan Fund.—This fund of \$382.35, contributed by the D. C. Home Economics Association, is available for loans to senior girls majoring in Home Economics.

Kellogg Medical School Loan Fund.—The W. K. Kellogg Foundation in Battle Creek, Michigan, has established a fund of \$16,874.74 for loans to students in the School of Medicine.

Harris Loan Fund.—This fund of \$400, established by George W. Harris, is available for loan to an orthoptic technician student.

Law Association Loan Fund.—The George Washington Law Association has established a loan fund in the amount of \$822.56 for loans to students in the Law School.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, makes available a fund for loans to both men and women students under the age of twenty-five years.

Henry Strong-William A. Maury Loan Fund.—This fund, also allocated from the funds of the Henry Strong Educational Foundation, is to be loaned to students under the age of twenty-five years in the George Washington University Law School.

Sutherland Medical School Loan Fund.—This fund, in the amount of \$1,360 and established by Mrs. Rose L. Sutherland, is available for loans to students in the School of Medicine.

School of Medicine Loan Fund.—This fund of \$531.26, contributed by medical students, is available for loans to students of the School of Medicine.

REGULATIONS

A student enrolled in the University is required to conform to the University regulations and to comply with the rules and regulations of the college, school, or division in which he is registered.

A student who withdraws or is suspended, or is otherwise absent from the University for one term or more, may re-enter and continue his work only under the rules and regulations in force at the time of his return.

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

For further regulations regarding attendance, consult the announcements of the several colleges and schools.

SCHOLARSHIP REQUIREMENTS

A student who fails to maintain the scholarship requirements of the college, school, or division in which he is registered may be dismissed from the University.

GRADES

Grades are not given out by instructors but are mailed to the student through the Office of the Registrar at the close of each term. Upon request, a copy of the student's grades will be forwarded to his parent or guardian.

The following grading system is used: excellent, *A*; good, *B*; average, *C*; passing, *D*; failing, *F*. Whenever a grade has not been assigned, the symbol *Inc.* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *Inc.* is a sign temporarily to indicate that all the required work of the course has not been completed and a satisfactory explanation has been given to the instructor. An "incomplete" can

not be made up after the lapse of one calendar year except by permission of the Faculty. Courses from which a student has withdrawn by proper authorization will be indicated by the symbol *W*. No student may repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned.

For graduate work, grades are indicated as "excellent", "satisfactory", "unsatisfactory", or "incomplete".

For the grading systems of the Law School and the School of Medicine, see the explanations in the announcements of those schools.

QUALITY-POINT INDEX

Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each credit hour for which the student has registered.

Scholarship is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of credit hours for which the student has registered, both based on the complete collegiate record. Courses marked *W* or *Inc.*, are not considered in determining the index, except that courses marked *Inc.* will be considered when a formal grade is recorded, or at the close of a calendar year, whichever occurs first. If an "incomplete" is not superseded by a proper grade within the allotted time, it is computed as zero quality points. Grades in courses taken at another institution are not considered in computing the quality-point index.

EXAMINATIONS

Examinations are scheduled in all courses at the end of each term or at the completion of the course.

A student guilty of dishonesty in examinations is subject to the regulations of the faculty under which he is registered.

For further regulations regarding examinations, consult the announcements of the several colleges, schools, and divisions.

WITHDRAWAL

Withdrawal from a course or from the University, *without academic or financial penalty*, requires the permission of the dean of the college, school, or division in which the student is registered. Permission to withdraw from the University will not be granted a student who has not a clear financial record. (See "Fees and Financial Regulations", pages 23-26.)

Withdrawal between October 31 and the end of the fall term and between February 28 and the end of the spring term is permitted only in exceptional cases.

All charges for courses dropped without the approval of the dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

A student may not withdraw from either the basic course (2 years) or the advanced course (2 years) of the Air Force ROTC without the approval of the President of the University.

CHANGES IN PROGRAM OF STUDIES

A student may not change or drop (see "Withdrawals", above) courses or change his status to that of auditor except with the approval of the dean of the college, school, or division in which he is registered, upon presentation of adequate reasons for such changes.

Change from one section to another of the same course or from one major subject to another within the same college or school may be made with the approval of the dean. All requirements specified in the course of study to which the change is made must be satisfied before graduation.

Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Applications for such change should be made on the proper form, obtainable in the Office of the Director of Admissions, where it should be filed.

CREDIT

Credit toward a degree is given only after regular registration for and satisfactory completion of the required work of classes in the University, or upon the granting of advanced standing in accordance with the regulations of the several colleges, schools, and divisions.

On request the Registrar will issue to the student a balance sheet showing the amount of work completed and the amount necessary to complete the requirements for a degree.

In special instances, a person who has been admitted to the University may be registered, with the permission of the instructor, as an "auditor" in a class. An auditor is not required to take active part in the exercises or to pass examinations, but no academic credit will be allowed.

TRANSCRIPTS OF RECORD

Official transcripts of student records will be forwarded on request to other institutions. Unofficial copies of records will be issued to the student on request. No charge is made for the first transcript; a fee of one dollar is charged for each one thereafter. No certificate of work done will be issued for a student who does not have a clear financial record.

SUMMER SCHOOL CREDIT

A student who plans to attend summer school sessions at another institution with the intention of having credits so obtained apply toward

graduation from this University must first secure the written approval of the dean of his college or school. In no event will such credits be recognized to an amount in excess of that which might be earned in a similar period in this institution.

PHYSICAL EDUCATION REQUIREMENTS

Students in the Junior College and freshmen* and sophomores in the School of Engineering are required to take Physical Education 1-2 and 11-12 unless they are registered for less than 9 credit hours or unless regular employment during the day makes it necessary to take all classes during the evening hours.

Any other exemptions will be granted only upon written petition which has been recommended by the physical education department concerned and approved by the dean of the college or school in which the student is registered.

A student entering the University with advanced standing is not exempt from the physical education requirements unless he has satisfactorily met the requirements elsewhere. Courses in military training are not accepted in satisfaction of these requirements.

The required medical and physical examinations, as specified by the departments of physical education, will be arranged at the time of registration.

GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirements of the college or school in which he is registered, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree should be filed in the Office of the Registrar at the time of registration for the last term of the senior or final year.

Scholarship.—In all undergraduate divisions of the University the scholarship requirement for graduation is a quality-point index of at least 2.00.

The graduate student must meet the scholarship requirements for the particular degree for which he is registered.

Curriculum.—Curriculum requirements for each degree are stated under the college or school offering work in preparation for the degree. (For Air Force ROTC graduation requirements see the Department of Air Science and Tactics.)

Residence.—Unless otherwise specified, in all undergraduate divisions of the University, a minimum of one year, or thirty credit hours, includ-

* Freshmen in the School of Engineering enrolled in the Air Force ROTC substitute Air Science 1-2 for Physical Education 1-2.

ing at least twelve credit hours in the major field, must be completed in residence. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the dean of the college or school concerned to pursue work elsewhere, the work of the senior or final year must be completed in residence.

The graduate student must meet the residence requirements for the particular degree for which he is registered.

With the permission of the dean of the college, school, or division concerned, a student may be granted leave of absence; such student should, however, remain technically in residence by paying the residence fee for each term he is absent. For the purpose of this regulation, the summer sessions will not be considered a term.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Thesis or Dissertation.—A thesis or dissertation submitted in partial satisfaction of requirements for the Master's degrees, the professional degrees in engineering, the degree of Doctor of Education, the degree of Doctor of Juridical Science, the degree of Doctor of Business Administration, or the degree of Doctor of Philosophy must be presented in its final form to the dean of the college or school concerned not later than the date specified in the University calendar. Three* copies of each thesis or dissertation are required, one typewritten original and two legible and complete carbon copies. Detailed instructions for the styling of all theses and dissertations should be obtained from the appropriate dean.

Accepted theses or dissertations, with accompanying drawings, become the property of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in the thesis or dissertation must be secured from the appropriate dean.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation in absentia is approved by the dean of his college or school.

HONORS

With distinction.—In all undergraduate divisions of the University the degree may be conferred "with distinction", at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution except that taken during the term immediately preceding the granting of the degree. To be eligible for this honor a student must have completed at this institution at least one-half of the work required for the degree.

* In the School of Education, four copies.

In the School of Medicine and the Law School, degrees may be conferred "with distinction", at the discretion of the Faculty, on those students who attain an average of *A* on all work taken for the degrees.

Special honors.—Special honors may be awarded by the Faculty to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department, under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty member representing the major department or field not later than the beginning of the senior year.

2. The student must meet such other conditions as may be set at the time his candidacy is approved.

3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution except that taken during the term immediately preceding the granting of the degree.

4. To be eligible for honors a student must have completed at this institution at least one-half of the work required for the degree prior to the beginning of the term immediately preceding the granting of the degree.

Military honors.—An Air Force ROTC cadet may be designated a "Distinguished Military Student" if he (1) has completed or been credited with the basic course and if he is within fifteen days of completing the advanced course; (2) is academically in the first third of the entire class in Air Science III and in the upper half of all students pursuing the same major and scheduled to graduate in the same academic year; (3) possesses outstanding qualities of military leadership, high moral character, and definite aptitude for the military service; and (4) has distinguished himself by demonstrated leadership through his accomplishments while participating in recognized campus activities.

An Air Force ROTC cadet may be designated a "Distinguished Military Graduate" if he has (1) completed the advanced course in the Air Force program; (2) been designated a Distinguished Military Student and maintained the standard for such designation from the time it was conferred until graduation; and (3) fulfilled the requirements for graduation from the University.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The University Membership Card, issued upon the payment of fees, must be presented as identification.

Library books, with the exception of those in the Law and Medical collections, may be drawn for home use for a period of two weeks. Any book which does circulate is subject to recall by the Librarian at any

time. Reserve books and periodicals for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

HOURS

The University Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

The Law Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday, 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

The Medical Library is open from 9:00 A.M. to 9:00 P.M. each class day (Saturday, 9:00 A.M. to 1:00 P.M.).

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building.

THE COLLEGES, SCHOOLS, AND DIVISIONS

THE JUNIOR COLLEGE

THE FACULTY AND STAFF OF INSTRUCTION •

Myron Law Koenig, Ph.D., *Dean of the Junior College*
 William Lewis Turner, Ph.D., *Assistant Dean of the Junior College*
 George Martin Koehl, A.M., *Assistant Dean in the Junior College*
 Carr Bartleson Lavell, A.M., *Assistant Dean in the Junior College*

Thomas Benjamin Brown, Ph.D., *Professor of Physics*
 Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*
 Norris Ingersoll Crandall, M.Arch., *Professor of Art*
 Walter Lynn Cheney, Ph.D., *Professor of Physics*
 Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
 Warren Reed West, Ph.D., *Professor of Political Science*
 Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*
 Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
 Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*
 Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
 Ralph Dale Kennedy, Ph.D., *Professor of Accounting*
 Florence Marie Mears, Ph.D., *Professor of Mathematics*
 Wood Gray, Ph.D., *Professor of American History*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
 Ira Bowers Hansen, Ph.D., *Professor of Zoology*
 Paul William Bowman, Ph.D., *Professor of Biology*
 Lawson Edwin Yocum, Ph.D., *Professor of Botany*
 Arthur Edward Burns, Ph.D., *Professor of Economics*
 †John Withrow Brewer, Ph.D., *Professor of International Law*
 Francis Kirkpatrick, A.M., *Professor of Home Economics*
 Louis Clark Keating, Ph.D., *Professor of Romance Languages*
 William Henry Myers, A.M., *Professor of Physical Education for Men*
 Harold Loran Geisert, Ph.D., *Professor of Sociology*
 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 §Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

• The President of the University, the Dean of Faculties of the University, the Dean and Assistant Deans of the College, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

† On sabbatical leave spring term 1953-54.

§ On leave of absence 1953-54.

Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

Ernest Sewall Shepard, A.M., *Professor of English Literature*

Charles Watson Bliven, M.S., *Professor of Pharmacy*

Alan Thomas Deibert, A.M., *Professor of Romance Languages*

Donald Stevenson Watson, Ph.D., *Professor of Economics*

Myron Law Koenig, Ph.D., *Professor of American History*

Calvin Darlington Linton, Ph.D., *Professor of English Literature*

Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*

Elbridge Colby, Ph.D., *Professor of Journalism*

Donald Chenoweth Kline, B.Arch., M.F.A., *Professor of Art*

Helen Bennett Lawrence, A.M., *Professor of Physical Education for Women*

Charles William Cole, Ph.D., *Professor of American Literature*

George Martin Koehl, A.M., *Professor of Physics*

Lubin Poe Leggette, A.M., *Depew Professor of Speech*

Irene Cornwell, Ph.D., *Professor of French*

Robert Dale Campbell, Ph.D., *Professor of Geography*

John Francis Latimer, Ph.D., *Associate Professor of Classical Languages and Literatures*

Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*

Antonio Alonso, A.M., *Associate Professor of Spanish*

Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*

Wolfram Karl Legner, Ph.D., *Associate Professor of German*

Joseph Henry Krupa, M.S., Ed.D., *Associate Professor of Physical Education for Men*

Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*

Lawrence Daniel Folkemer, Ph.D., *Associate Professor of Religion*

*Robert Randal Meijer, Ph.D., *Associate Professor of Physics*

Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*

William Lewis Turner, Ph.D., *Associate Professor of English*

Averett Howard, A.M., *Associate Professor of English Composition*

Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*

*Roderic Hollett Davison, Ph.D., *Associate Professor of European History*

George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*

Robert Hamilton Moore, Ph.D., *Associate Professor of English Composition*

Edith Elizabeth Mortensen, Ph.D., *Associate Professor of Zoology*

Calvin Weir Pettit, Ph.D., *Associate Professor of Speech*

Edwin Lockwood Stevens, A.M., *Associate Professor of Speech*

* On leave of absence 1951-52

Reuben Esselstyn Wood, Ph.D., *Associate Professor of Chemistry*
 Muriel Hope McClanahan, Ph.D., *Associate Professor of English Com-
 position*

Nels David Nelson, Ph.D., *Associate Professor of Mathematics*
 James Harold Coberly, Ph.D., *Associate Professor of American Liter-
 ature*

Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*
 William Frederick Sager, Ph.D., *Associate Professor of Chemistry*
 *John Edward Cantlon, Ph.D., *Associate Professor of Botany*
 Sam Clark Munson, Ph.D., *Associate Professor of Biology*
 Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Profes-
 sor of Physical Education for Men*

Willard Edmund Caldwell, Ph.D., *Associate Professor of Psychology*
 Rafael Supervia, Doctor en Derecho, *Associate Professor of Spanish*
 Martin Steele Day, Ph.D., *Assistant Professor of English*
 Phyllis Nichols Rowe, A.M., *Assistant Professor of English*
 Vera Lillian Mowry, Ph.D., *Assistant Professor of English*
 Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
 James Coogan, Ph.D., *Assistant Professor of Economics*
 Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor
 of Education*

James Willard Harkness, B.S., Ed.M., *Assistant Professor of Chemistry*
 John Gage Allee, Jr., A.M., *Assistant Professor of English*
 Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
 Richard Catlin Haskett, Ph.D., *Assistant Professor of American History*
 James Willis Robb, A.M., *Assistant Professor of Romance Languages*
 Ruth Elsie Jones, A.M., *Assistant Professor of English Composition*
 Edith Shores Surrey, A.M., *Assistant Professor of Speech*
 Robert Crumpton Willson, A.B., *Assistant Professor of Journalism*
 Lee Sheward Bielski, A.M., *Assistant Professor of Speech*
 William Graham Clubb, A.M., *Assistant Professor of French*
 Mildred Hollander Shott, A.M., *Assistant Professor of Secretarial
 Studies*

Theodore Peter Perros, Ph.D., *Assistant Professor of Chemistry*
 Wilson Emerson Schmidt, Ph.D., *Assistant Professor of Economics*
 Earl Larkin Williams, A.M., *Lecturer in Mathematics*
 Frederick Charles Kurtz, M.B.A., C.P.A., *Instructor in Accounting*
 William Franklin Heckert, M.S., *Instructor in Physics*
 Raymond Howard Reno, A.M., *Instructor in English Composition*
 William Ashley Tanner, B.S., *Instructor in Physics*
 Robert Henry Tanck, A.M., *Instructor in Psychology*
 Nancy Elizabeth Nickel, B.S. in Ed., *Instructor in Physical Education
 for Women*

* On leave of absence 1953-54.

COMMITTEES •

THE DEAN'S COUNCIL ‡

1954

Roderic Hollett Davison
Lawrence Daniel Folkemer

1955

Florence Marie Mears
James Willard Harkness

1956

Vera Lillian Mowry
John Edward Cantlon

COMMITTEE ON ADMISSION AND ADVANCED STANDING

George Martin Koehl, *Chairman*
 Carr Bartleson Lavell, *Vice-Chairman*
 Edwin Lockwood Stevens William Graham Clubb
 Richard Catlin Haskett

COMMITTEE ON SCHOLARSHIP

William Lewis Turner, *Chairman*
 Carr Bartleson Lavell, *Vice-Chairman*
 George Martin Koehl Kathryn Mildred Towne
 Wolfram Karl Legner Raymond George Hanka
 Martin Steele Day Theodore Peter Perros

JUNIOR COLLEGE ADVISORY COMMITTEE

Dean of the Junior College, *Chairman*
 Assistant Dean of the Junior College, *Vice-Chairman*
 Samuel Nathaniel Wrenn George Martin Koehl
 Carr Bartleson Lavell

GENERAL INFORMATION

INTRODUCTORY

The Junior College, which comprises the first two years of the standard four-year college program in the liberal arts and sciences, was established in 1930, as a part of the academic reorganization of the University.

* The President of the University and the Dean of the Junior College are members *ex officio* of all committees.

‡ Elected by the Faculty.

Prior to 1930, the four-year program had been administered by Columbian College since its organization in 1821.

The Junior College curricula continue the studies of a general cultural nature begun in the secondary schools, and lay a foundation for the more specialized work which is to follow. Emphasis is accordingly laid (1) upon the social, cultural, biological, and physical background of civilization (history, political science, physical and biological sciences, literature, etc.) and (2) upon the discipline necessary to the effective prosecution of more advanced work (English rhetoric and composition, foreign languages, mathematics, etc.).

The Junior College also provides the pre-professional work required for admission to the schools of Pharmacy, Education, and Government, and the first two years of the pre-professional work required by the schools of Medicine and Law.

In addition it provides two-year curricula in vocational training.

ADVISORY SYSTEM

In order that students may have opportunities for assistance in planning their courses and also for obtaining personal, educational, and vocational advice in every phase of their academic work during the first two years, a number of members of the Faculty serve as advisers to Junior College students.

Members of the Faculty, selected for their knowledge of Junior College requirements and student programs, advise students in making up their programs of study for each term. A separate staff of experienced advisers under the chairmanship of the Dean assists those students who find it difficult to make adjustments to college life because of scholastic or other reasons. Students who are "warned" or who are on probation may be required to consult these advisers at regular intervals. Students are encouraged to consult any member of the Advisory Staff or their instructors about college problems at any time.

Copies of notices of "warning" or probation will be sent to the parents or guardians of students on request, and the Dean and members of the Advisory Staff are available for consultation with parents or guardians concerning student problems.

REGULATIONS

Students in the Junior College are subject to, and are expected to familiarize themselves with, the regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26, and the University regulations stated on pages 41-47.

SCHOLASTIC-APTITUDE TESTS

Students admitted to the Junior College may be required to take the scholastic-aptitude tests of the University.

REQUIRED PLACEMENT EXAMINATIONS

English.—Special placement examinations, required of all entering freshmen, will be conducted by the English Department. Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both terms of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A.

Romance Languages.—A standardized placement examination will be required of all entering students who wish to continue in college the language begun in high school. Upon completion of the examination assignment will be made to the appropriate course with credit to be assigned on the usual basis. This does not apply to students whose previous experience in a given language is equivalent to two college years.

The Use of Correct English.—The use of correct English, oral or written, is required not only in English but also in all other courses (see page 77).

FIRST- AND SECOND-GROUP COURSES

A Junior College student may not take second-group courses (courses numbered 101-200) without the written permission of the instructor and of the Dean of the Junior College. A student will not be permitted to postpone a first-group course required under the curriculum for which he is registered in order to take a second-group course for elective credit. The principle that first-group courses must be taken in the Junior College years, and advanced courses in Columbian College and the professional schools, will be rigidly adhered to in approving student programs. No student on probation is permitted to take second-group courses except by the express permission of the Committee on Scholarship.

AMOUNT OF WORK

Fifteen or sixteen credit hours, not including required physical education, constitute normal work. A student not on probation may be permitted by the Dean to take seventeen credit hours.

A student having a quality-point index of 3.50 may, with the permission of the Dean, take eighteen or nineteen credit hours. No student may

take more than nineteen credit hours, except with the permission of the Committee on Scholarship.

For an employed student working more than twenty-four hours a week, nine credit hours, not including required physical education, constitute normal work. An employed student not on probation may be permitted by the Dean to take ten credit hours. An employed student having a quality-point index of 3.50 may be permitted by the Dean to take twelve or thirteen credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, to bring his program within the limitations set by the Faculty for the amount of work to be carried by an employed student.

ATTENDANCE

The student is held responsible to the instructor in charge of the course for which he is registered for all the work of the course, and all absences must be excused before provision will be made for him to make up the work missed.

With the exceptions noted below, occasional absences, not to exceed in number for each term the credit hours for the term, will be automatically excused. (If a course has distinct divisions such as lectures, laboratories, recitations, etc., these excuses apply pro rata to such separate divisions.) In the application of this rule absences immediately preceding or following holiday periods are to be counted double.

Such automatic excuses are intended to cover the occasional minor exigencies and not to constitute an indiscriminate privilege. A student on probation is allowed no automatic excuses.

Excuses for absences from two or more consecutive class periods, and for absences from examinations which have been announced in advance, can be obtained only by making written application to the instructor in charge of the course.

A student whose absences from any class, whether excused or unexcused, are in excess of one-fourth of the total number of class periods will receive the grade of F for the course, except by special ruling of the Dean on recommendation of the instructor in the course.

CLASSIFICATION OF STUDENTS

A student who has satisfactorily completed at least thirty-two credit hours of work, including eighteen credit hours in his curriculum requirements, is classed as a *sophomore*.

THE DEGREE OF ASSOCIATE IN ARTS

Upon the satisfactory completion of the requirements of the Junior College, the degree of Associate in Arts is conferred.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 41 and 42.

In order to receive the degree of Associate in Arts a student must have a quality-point index of at least 2.00.

Honor Roll.—The name of every student who has a quality-point index of 3.50 or higher will be placed on the honor roll and published. No consideration is given to those who have completed a total of less than fifteen credit hours. A place on the honor roll does not necessarily mean that the student will receive honors upon graduation.

Probation.—A student must maintain a quality-point index of at least 2.00 or be placed on probation.

A student remains on probation as long as his quality-point index is below 2.00; however, the student who has a quality-point index between 1.50 and 2.00 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

Suspension.—A student who has a quality-point index below 1.50 will be suspended; however, a student who has a quality-point index between 1.40 and 1.50 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

A student who is subject to probation for the third time, whether successive or after an interval, will be suspended.

For the purpose of these rules, the work taken in the summer sessions is considered one term.

A student suspended for poor scholarship may apply for readmission after an interval of two terms. On application for readmission the student must submit specific evidence to the Committee on Scholarship that he is better qualified to pursue college work. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship rules are applied when a student has undertaken a minimum of twelve hours. Thereafter, the rules are applied in multiples of nine hours.

Warnings.—At stated intervals during the academic year instructors file in the Office of the Junior College the names of those students who are doing work of *D* grade or lower. A "warning" will then be sent to the student and a copy of the warning filed with the appropriate adviser. A "warning" constitutes notice to the student that he must consult his

instructor and adviser at the earliest opportunity. "Warning periods" are established between the 7th and 8th weeks of the fall and spring terms.

CURRICULUM REQUIREMENTS

The satisfactory completion of sixty credit hours of college work, exclusive of physical education, is required as outlined in one of the Junior College curricula described below. At least fifteen of the required credit hours must be completed in residence.

Except for students registered for the combined degrees of Bachelor of Arts and Doctor of Medicine, not more than twelve credit hours of professional courses may be included in the one hundred and twenty credit hours required for the Bachelor's degrees in Columbian College. Junior College students electing professional courses under this rule must obtain the approval of the Dean of the Junior College.

Physical Education Requirements.—Physical education is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", page 44.)

Foreign Language Requirements.—For the degree of Associate in Arts a student must have completed satisfactorily the equivalent of two years of college work in a single foreign language except in the pre-pharmacy and pre-physical education curricula and the terminal curricula in Secretarial Studies and Accounting. (See "Placement Examination", page 56.)

A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language. If he offers three units, he must complete the second term of the second-year college course in the same language. If he offers two units, he must complete the entire second-year college course in the same language. If he offers one unit, he must complete the second term of the first-year college course and the entire second-year course in the same language.

In some instances foreign languages are required or recommended as a preparation for advanced work in Columbian College and the professional schools. The student should consult his adviser as to these requirements, so that appropriate foreign languages may be included, when necessary, in his Junior College program.

English Requirements.—Entering students registering in the pre-Columbian College curricula, beginning with the fall term of 1953, will follow the sequence of English 1, both terms of one of the introductory literature courses, and English 2. This does not apply to students transferring to these curricula or students registering in the pre-professional or vocational curricula. Students whose plans require the completion of English 1 and 2 before taking the required literature course must secure permission from the Dean.

Curricula for Admission to Columbian College and the Professional Schools

Each of the following curricula comprises the first two years of a standard four-year college course and prepares the student for upper division work. Requirements for graduation from the Junior College may not be the same as the requirements for admission to Columbian College or a professional school. Therefore, the student should consult the specific admission requirements of the college or school for which he is preparing.

The first sixty credit hours of the ninety required for admission to the School of Medicine are undertaken in the Junior College. Each pre-medical program must be approved by the premedical adviser. For specific requirements, see "Admissions", pages 12-21.

COLUMBIAN COLLEGE:

1. ARTS AND LETTERS*

The following two-year curriculum prepares for the Bachelor of Arts program in Columbian College:

	Credit Hours
English† English 1; 51-52, 71-72, 91-92, or Classical Languages 71-72; English 2.....	12
Foreign Languages .. See page 59 for foreign language requirement...	12
Social Studies Economics 1-2, History 39-40, 71-72, Political Science 9-10, or Sociology 1-2.....	6
Science Biology 1-2, Botany 1, 2, Chemistry 3-4, 11-12, Physics 5, 7 (6, 7), (5, 6), or Zoology 1-2..	6-8
Physical Education .. See page 44 for statement of requirement.	
Recommended	
Electives Art 11-12, 71-72; Philosophy 51-52, 111-12; Religion 9-10, 59-60.....	6
Elective	16 or 18
Total.....	60 or 62

2. SCIENCE*

The following two-year curriculum prepares for the Bachelor of Science curriculum in Columbian College:

* Students who have had high school courses in chemistry, mathematics, and physics should consult the description of the beginning courses in these fields. For the degree of Bachelor of Science, the student should obtain the advice of the major departments as to proper prerequisite and collateral courses for the intended major.

† Entering students registering in pre-Columbian College curricula beginning with the fall term of 1953, will follow the sequence of English 1, both terms of one of the introductory literature courses, and English 2. This does not apply to students transferring to these curricula or students registering in the pre-professional or vocational curricula. Students whose plans require the completion of English 2 and 3 before taking the required literature course must secure permission of the Dean.

	Credit Hours
English*	English 1; 51-52, 71-72, 91-92, or Classical Languages 71-72; English 2..... 12
Foreign Language ...	French or German or non-science elective..... 12
	NOTE.—A reading knowledge of French or German is required. This may be satisfied by French 4 or German 4 or by special examination.
Mathematics	Mathematics 3, 6, or electives..... 6
	NOTE.—The Mathematics 3 requirement may be satisfied by offering two years of high school algebra acceptable for admission; the Mathematics 6 requirement may be satisfied by offering one-half year of high school trigonometry acceptable for admission.
Social Studies	Economics 1-2, History 39-40, 71-72, Political Science 9-10, or Sociology 1-2
or Recommended Electives	Art 11-12, 71-72; Philosophy 51-52, 111-12; Religion 9-10, 59-60..... 6
Science	(a) Biology 1-2, Botany 1, 2, Zoology 1-2 (b) Chemistry 11-12, Physics 5, 7 (6, 7) (5, 6) 18 to 22
	(In satisfying this requirement, at least one year-course must be taken in each group (a) and (b).)
Physical Education ..	See page 44 for statement of requirement.
Elective†	2 to 12
Total.....	60 to 64

SCHOOL OF PHARMACY:

The following two-year curriculum prepares for the Bachelor of Science in Pharmacy curriculum in the School of Pharmacy:

	Credit Hours
English	English 1, 2 6
Science	Botany 1 or 2, Chemistry 11-12, Physics 5-6, Zoology 1 (Freshman year)..... 21
	Chemistry 21, 22 (Sophomore year) 8
Social Studies	Economics 1 3
Professional Courses ..	Pharmacy 1-2 (Freshman year) 3
	Pharmacy 21-22, 23, 25 (Sophomore year).... 14
Physical Education ..	See page 44 for statement of requirement.
Elective	14
Total.....	69

* See the second footnote on page 60.

† Credit is not given for courses elected in Physical Education or Secretarial Studies.

SCHOOL OF EDUCATION:

1. EDUCATION

The following two-year curriculum prepares for the Bachelor of Arts in Education curriculum in the School of Education:

	Credit Hours
English	English 1, 2 6
	English 51-52, 71-72, or 91-92..... 6
Foreign Language ...	(French, German, Latin, Russian, or Spanish.) See page 59 for foreign language requirement 12
Social Studies	History 71-72 6
	Economics 1-2; Geography 71, 72; History 39-40; Political Science 9-10; or Sociology 1-2. (Those offering for admission two or more acceptable senior high school units in the Social Studies may be exempted from this requirement) 6
Science and Mathematics.....	Two terms to supplement senior high school courses, selected from: Biology 1-2; Botany 1, 2; Chemistry 3-4, 11-12; Physics 5 and 6 or 7; Zoology 1-2; or Mathematics 3 and 6 or 6 and 12.....6 or 8
Other Courses	Psychology 1 and 22 6
	Speech 1 or 11..... 3
	Statistics 53 3
Physical Education ..	See page 44 for statement of requirement.
Elective	4 to 6
Total.....	60

2. HOME ECONOMICS

The following two-year curriculum prepares for the Bachelor of Science in Home Economics curriculum in the School of Education:

	Credit Hours
English	English 1, 2 6
	English 51-52, 71-72; Speech 1, 2 (1, 11)..... 6
Foreign Language ...	(French, German, Latin, Russian, or Spanish.) See page 59 for foreign language requirement 12
Social Studies*.....	Economics, History, Political Science, or Sociology 6
Science	Chemistry 3-4, 11-12 (Sophomore year)..... 8
Psychology	Psychology 1 3
Physical Education ..	See page 44 for statement of requirement.

* Courses selected with the recommendation of the adviser in the Department of Home Economics.

	Credit Hours
Curriculum Electives. Home Economics 1, 22 (Freshman year).....	6
Home Economics 51, 62 (Sophomore year)....	6
Academic Electives .. (Freshman year)	3
(Sophomore year)	4
Total.....	60

3. PHYSICAL EDUCATION FOR MEN

The following two-year curriculum prepares for the Bachelor of Science in Physical Education curriculum in the School of Education:

	Credit Hours
English English 1, 2	6
Social Studies History 39-40, 71-72, Political Science 9-10, or Sociology 1-2 (Freshman year).....	6
Economics, History, or Political Science (Soph- omore year)	6
Science Biology 1-2 or Zoology 1-2 (Freshman year)...	6 or 8
Physical Education	8
Curriculum Electives. Physical Education 43-44, 47; Speech 1 or 11 (Freshman year)	9
Physical Education 45-46, 49, 50, 58; Psychology 1, 22 (Sophomore year)	18
Elective	9
Total.....	68 or 70

4. PHYSICAL EDUCATION FOR WOMEN

The following two-year curriculum prepares for the Bachelor of Science in Physical Education curriculum in the School of Education:

	Credit Hours
English English 1, 2	6
English 51-52, 71-72, or 91-92	6
Social Studies History 39-40, 71-72; Political Science 9-10; or Sociology 1-2	6
Science Biology 1-2 or Zoology 1-2	6 or 8
Physical Education	4
Curriculum Electives. Physical Education 43-44 (Freshman year)....	4
Physical Education 45-46, 49, 50; Psychology 1, 22 (Sophomore year)	16
Academic Electives .. (Each year)	6 or 8
Total.....	64 or 66

SCHOOL OF GOVERNMENT:**1. ACCOUNTING AND BUSINESS ADMINISTRATION**

The following two-year curriculum prepares for the Bachelor of Arts in Government curricula in Accounting and in Business Administration in the School of Government:

	Credit Hours
Accounting Accounting 1-2	6
English English 1, 2, 11.....	9
Foreign Language ... See page 59 for foreign language requirement...	12
Social Studies Economics 1-2	6
..... History 71-72 or Political Science 9-10.....	6
..... Speech 1	3
Statistics Statistics 51, 52	6
Physical Education .. See page 44 for statement of requirement.	
Elective (Students interested in Foreign Commerce in- clude Geography 51)	12
Total.....	60

2. FOREIGN AFFAIRS

The following two-year curriculum prepares for the Bachelor of Arts in Government curriculum in Foreign Affairs in the School of Government:

	Credit Hours
English English 1, 2	6
Foreign Language ... See page 59 for foreign language requirement...	12
Social Studies Economics 1-2, History 39-40, 71-72; Political Science 9-10	24
Mathematics, Science. Biology, Botany, Chemistry, Mathematics, Phys- ics, Statistics, or Zoology	6 or 8
Physical Education .. See page 44 for statement of requirement.	
Elective (To satisfy minimum required credits. Students interested in Foreign Service include Geog- raphy 51)	12
Total.....	60 or 62

3. BUSINESS AND ECONOMIC STATISTICS

The following two-year curriculum prepares for the Bachelor of Arts in Government curriculum in Business and Economic Statistics in the School of Government:

	Credit Hours
English English 1, 2	6
Foreign Language ... See page 59 for foreign language requirement...	12

	Credit Hours
Social Studies Economics 1-2, Philosophy 51-52.....	12
Mathematics Mathematics 20 and prerequisites.....	3 to 12
Accounting Accounting 1-2	6
Statistics Statistics 51 or 91-92	3 or 6
Physical Education .. See page 44 for statement of requirement.	
Elective	6 to 18
Total.....	60

VOCATIONAL CURRICULA

In addition to the above curricula, all of which prepare for admission to upper division colleges and schools, the Junior College offers the following two-year terminal courses.

1. SECRETARIAL STUDIES

	Credit Hours
English English 1, 2	6
..... English 51-52, 71-72, or 91-92	6
Social Studies Economics 1-2	6
General Accounting 1	3
..... Speech 11	3
Secretarial Studies* .. Secretarial Studies 1, 2, 11, 12, 15, 16, 51, and 54	24
Physical Education .. See page 44 for statement of requirement.	
Elective (To be selected with approval of adviser).....	12
Total.....	60

2. ACCOUNTING

The required work may be completed in two years on a full-time basis or in three years on a part-time basis, with the approval of the adviser.

REQUIRED COURSES

	Credit Hours
Accounting 1-2 Introductory Accounting	6
Accounting 101 Cost Accounting	3
Accounting 111 Financial Statement Analysis	3
Accounting 121-22 .. Intermediate Accounting	6
Accounting 155 Business Budgeting	3
Accounting 161 Business Taxation	3
Accounting 171 Auditing	3
Accounting 181 Accounting Systems	3

* Qualified students, upon the approval of the adviser or the satisfactory completion of a placement test, may waive Secretarial Studies 1, 11, and 12. Other courses, approved by the adviser, will be substituted.

	Credit Hours
Accounting 191 Advanced Accounting	3
Business Administration 131. Business Finance	3
Economics 1-2 Principles of Economics	6
English 1, 2 English Composition	6
Political Science 127 . Commercial Law: Contracts, Agency, and Bail- ments	3
Political Science 128 . Commercial Law: Negotiable Instruments, Prop- erty, Sales, Mortgages	3
Physical Education .. See page 44 for statement of requirement.	
Elective (To be selected with the approval of the ad- viser)	6
Total.....	60

Examinations for Waiving Curriculum Requirements *

A student desiring to omit a required course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum requirements in that subject and may qualify for registration in an advanced course. Passing this examination does not entitle the student to any hours of credit toward the degree. A student desiring to take such examinations should make written request of the Dean and pay the required fee at the Office of the Treasurer before the date of the examination specified in the University calendar.

Honors

The degree of Associate in Arts may be conferred "with distinction" upon the student who has a quality-point index of 3.50 or higher, provided that student has been in residence at the University for 30 hours, 15 of which must have been taken in the Junior College at the time the index is calculated.

* This provision does not apply to the premedical student, all of whose required premedical work must be taken in a recognized college of arts and sciences.

COLUMBIAN COLLEGE

THE FACULTY AND STAFF OF INSTRUCTION •

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Dean of Columbian College*

Calvin Darlington Linton, Ph.D., *Assistant Dean of Columbian College*

Thomas Benjamin Brown, Ph.D., *Professor of Physics*

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry*

Norris Ingersoll Crandall, M.Arch., *Professor of Art*

Robert Whitney Bolwell, Ph.D., *Professor of American Literature*

Walter Lynn Cheney, Ph.D., *Professor of Physics*

James Henry Taylor, Ph.D., *Professor of Mathematics*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*

Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*

George Gamow, Physics D., *Professor of Theoretical Physics*

Warren Reed West, Ph.D., *Professor of Political Science*

Frank Mark Weida, Ph.D., *Professor of Statistics*

Francis Edgar Johnston, Ph.D., *Professor of Mathematics*

Leland Wilbur Parr, Ph.D., *Professor of Bacteriology*

Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*

Merle Irving Protzman, Ph.D., *Professor of Romance Languages*

Florence Marie Mears, Ph.D., *Professor of Mathematics*

Wood Gray, Ph.D., *Professor of American History*

Thelma Hunt, Ph.D., M.D., *Professor of Psychology*

Ira Bowers Hansen, Ph.D., *Professor of Zoology*

Paul William Bowman, Ph.D., *Professor of Biology*

Lawson Edwin Yocum, Ph.D., *Professor of Botany*

Arthur Edward Burns, Ph.D., *Professor of Economics*

†John Withrow Brewer, Ph.D., *Professor of International Law*

Louis Clark Keating, Ph.D., *Professor of Romance Languages*

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*

Harold Loran Geisert, Ph.D., *Professor of Sociology*

Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*

* The President of the University, the Dean of Faculties of the University, the Dean and the Assistant Dean of the College, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

† On sabbatical leave spring term 1953-54.

- *Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*
 Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*
 Ernest Sewall Shepard, A.M., *Professor of English Literature*
 George Winchester Stone, Jr., Ph.D., *Professor of English Literature*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Alan Thomas Deibert, A.M., *Professor of Romance Languages*
 Chester Elwood Leese, Ph.D., *Professor of Physiology*
 Donald Stevenson Watson, Ph.D., *Professor of Economics*
 Myron Law Koenig, Ph.D., *Professor of American History*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
 Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*
 Elbridge Colby, Ph.D., *Professor of Journalism*
 Donald Chenoweth Kline, B.Arch., M.F.A., *Professor of Art*
 Charles William Cole, Ph.D., *Professor of American Literature*
 George Martin Koehl, A.M., *Professor of Physics*
 Lubin Poe Leggette, A.M., *Depew Professor of Speech*
 Joseph Richard Sizoo, A.M., S.T.D., D.D., Litt.D., *Milbank Professor of Religion*
 Irene Cornwell, Ph.D., *Professor of French*
 Robert Dale Campbell, Ph.D., *Professor of Geography*
 William Columbus Davis, Ph.D., *Professorial Lecturer on Latin American History*
 Edward Campion Acheson, Ph.D., *Associate Professor of Finance*
 John Francis Latimer, Ph.D., *Associate Professor of Classical Languages and Literatures*
 Antonio Alonso, A.M., *Associate Professor of Spanish*
 Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 Wolfram Karl Legner, Ph.D., *Associate Professor of German*
 Lawrence Daniel Folkemer, Ph.D., *Associate Professor of Religion*
 *Robert Randal Meijer, Ph.D., *Associate Professor of Physics*
 Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*
 Wolfgang Herbert Kraus, Dr.Jur., S.J.D., *Associate Professor of Political Science*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 *Roderic Hollett Davison, Ph.D., *Associate Professor of European History*
 George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*
 Robert Hamilton Moore, Ph.D., *Associate Professor of English Composition*
 Edith Elizabeth Mortensen, Ph.D., *Associate Professor of Zoology*
 Calvin Weir Pettit, Ph.D., *Associate Professor of Speech*

* On leave of absence 1953-54.

Edwin Lockwood Stevens, A.M., *Associate Professor of Speech*
 Reuben Esselstyn Wood, Ph.D., *Associate Professor of Chemistry*
 Nels David Nelson, Ph.D., *Associate Professor of Mathematics*
 James Harold Coberly, Ph.D., *Associate Professor of American Literature*

William Frederick Sager, Ph.D., *Associate Professor of Chemistry*
 *John Edward Cantlon, Ph.D., *Associate Professor of Botany*
 Sam Clark Munson, Ph.D., *Associate Professor of Biology*
 Willard Edmund Caldwell, Ph.D., *Associate Professor of Psychology*
 Rafael Supervia, Doctor en Derecho, *Associate Professor of Spanish*
 Martin Steele Day, Ph.D., *Assistant Professor of English*
 Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
 John Gage Allee, Jr., A.M., *Assistant Professor of English*
 Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
 Richard Catlin Haskett, Ph.D., *Assistant Professor of American History*
 James Coogan, Ph.D., *Assistant Professor of Economics*
 Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*
 Alberto Vázquez, Ph.D., *Lecturer on Spanish American Literature*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1954

Thelma Hunt

Francis Edgar Johnston

1955

Wolfgang Herbert Kraus
 Edwin Lockwood Stevens

1956

Robert Corbin Vincent
 John Gage Allee, Jr.

COMMITTEE ON ADMISSION AND ADVANCED STANDING

Calvin Darlington Linton, *Chairman*Edith Elizabeth Mortensen, *Secretary*

Alan Thomas Deibert

Charles William Cole

James Coogan

COMMITTEE ON THE USE OF CORRECT ENGLISH

Averett Howard, *Chairman*

George Francis Henigan, Jr.

Edith Elizabeth Mortensen

Muriel Hope McClanahan

Martin Steele Day

* On leave of absence 1953-54.

‡ The President of the University and the Dean of Columbian College are members ex officio of all committees.

§ Elected by the Faculty.

COMMITTEE ON SCHOLARSHIP

Fred Salisbury Tupper, *Chairman*
 Florence Marie Mears Samuel Nathaniel Wrenn
 Howard Maxwell Merriman Antonio Alonso

COMMITTEE ON STUDIES

The Dean of the College, *Chairman*
 Gretchen Louisa Rogers Edith Elizabeth Mortensen
 (Languages and Literatures) *(Natural Sciences)*
 Florence Marie Mears Wood Gray
 (Mathematics and Physical Sciences) *(Social Sciences)*

DIVISIONAL ORGANIZATIONS

LANGUAGES AND LITERATURES

James Harold Coberly, *Chairman*
 John Francis Latimer, *Secretary*

Educational Committee

William Lewis Turner, *Chairman*
 Phyllis Nichols Rowe James Willis Robb

MATHEMATICS AND THE PHYSICAL SCIENCES

Nels David Nelson, *Chairman*
 Reuben Esselstyn Wood, *Secretary*

Educational Committee

Florence Marie Mears, *Chairman*
 Samuel Nathaniel Wrenn Everett Herschel Johnson

NATURAL SCIENCES

Thelma Hunt, *Chairman*

Educational Committee

Edith Elizabeth Mortensen, *Chairman*
 Chester Elwood Leese Curtis Edward Tuthill

SOCIAL SCIENCES

Ronald Bettes Thompson, *Chairman*
Lawrence Daniel Folkemer, *Secretary*

Educational Committee

Harold Loran Geisert, *Chairman*
Donald Stevenson Watson Roderic Hollett Davison

GENERAL INFORMATION

INTRODUCTORY

Columbian College was founded in 1821. James Monroe, then President of the United States, aided in obtaining the charter from Congress which established "The Columbian College in the District of Columbia" for the "sole and exclusive purpose of educating youth in the English, learned and foreign languages, the liberal arts, sciences and literature", with full power to confer all degrees "usually granted and conferred in colleges".

In 1930, when the Junior College was established, the name "Columbian College" was bestowed upon the senior college of liberal arts.

THE COLUMBIAN COLLEGE PROGRAM

In The George Washington University, the program for liberal arts and sciences extends from the general collegiate education of the Junior College (the freshman and sophomore years) through the instruction for the Bachelor's degrees of Columbian College (the junior and senior years), and the studies for the Master's degrees which are also in Columbian College, to the graduate discipline leading to the degree of Doctor of Philosophy, which is administered by the Graduate Council.

The purpose of Columbian College is to round out the program of liberal education begun in the Junior College and to bring to a focus educationally the individual talents and aptitudes of the student of liberal arts and sciences.

The program involves a comprehensive survey of a field of study, together with such knowledge of other fields as will contribute to the general educational development of the student. A field of study may be confined to one department or may involve a group of related courses in more than one department, or more than one division.

DIVISIONAL ORGANIZATIONS

The following divisions have been established in The George Washington University based on the relationship of course content, interrelation of methods and prerequisites, and similarity of background and viewpoint:

1. *The Division of Languages and Literatures.*—The departments of Classical Languages and Literatures, English, Germanic Languages and Literatures, and Romance Languages and Literatures.
2. *The Division of Mathematics and the Physical Sciences.*—The departments of Biochemistry, Chemistry, Mathematics, Pharmacology, Physics, and Statistics.
3. *The Division of the Natural Sciences.*—The departments of Anatomy, Bacteriology, Biology, Botany, Geography, Geology, Neurology, Pathology, Physiology, Psychology, and Zoology.
4. *The Division of the Social Sciences.*—The departments of Accounting, Business Administration, Economics, Education, History, Law, Philosophy, Political Science, Religion, Sociology, and Speech.

The departments under these University divisions function for Columbian College only in such fields of study as are appropriate for a senior college of arts, letters, and sciences.

REGULATIONS

Students in Columbian College are subject to, and are expected to familiarize themselves with, the regulations regarding ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26, and the University regulations stated on pages 41-47.

PREREQUISITES

It is assumed that a student entering Columbian College has met the requirements of the Junior College under the *Arts and Letters* curriculum or the *Science* curriculum. Following is a summary of these prerequisites:

The *Arts and Letters* curriculum: (1) English composition (6 credit hours) and an additional year course (6 credit hours) in English, American, or European literature. A first-group course in Art, Classical Languages, or Philosophy may be substituted for the course in literature. (2) Two college years (at least 12 credit hours) of a single foreign language or the equivalent (see foreign-language requirement, page 59), are required. A transfer student who has had foreign-language courses in another institution meeting 4 or 5 times a week may have acquired as much as 12 credit hours in a foreign language without having taken four terms (two full years). Such a student is required to take additional work here in the same language until he has completed four terms (or an equivalent combination of high school years and college terms).

(3) At least one year (6 credit hours) in social studies, chosen from first-group courses in History, Political Science, Economics, or Sociology, is required. (4) At least one year (6 or 8 credit hours) of a laboratory science (Biology, Botany, Chemistry, Physics, or Zoology) is required.

The remaining hours of the Junior College programs (roughly a minimum of 22 to 24 hours) should be devoted to the prerequisite courses required by the prospective major department (as stated following the departmental staff in the courses of instruction section of the CATALOGUE) or recommended by the advisers in the field-of-study major (see pamphlets prepared by the respective advisers), together with appropriate electives.

The *Science* curriculum requirements in English are the same as those of the Arts and Letters curriculum. A year course of a social study or of a recommended elective in Art, Philosophy, or Religion is required. The foreign-language requirement is the same as for the Arts and Letters curriculum, except that French or German is specified. At least 6 credit hours in Mathematics must be taken; additional work in Mathematics is required of prospective majors in Chemistry or Physics. In science, the student should take courses in both biological and physical sciences, bearing in mind the prerequisites stated by the department under which he expects to major as well as specified prerequisites in certain departments (such as Mathematics and Chemistry for majors in Physics, or Mathematics and Physics for majors in Chemistry).

A transfer student admitted to Columbian College with deficiencies in freshman or sophomore work (whether in amount or in distribution of courses), corresponding to the programs outlined above, is required to begin to make up such deficiencies immediately upon admission to Columbian College, and to carry courses for the purpose each term until all the general education requirements described above are satisfied. Students transferring from the School of Government must complete pre-Columbian College requirements in science and in literature (or Art, Classical Languages, or Philosophy), as prescribed in the Arts and Letters curriculum.

AMOUNT OF WORK

A full-time student who is not on probation may take ordinarily not more than seventeen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take not more than ten credit hours.

A full-time student whose quality-point index is 3.50 or higher may take not more than nineteen credit hours. An employed student who meets the same standard may take not more than twelve credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ATTENDANCE

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for the student to make up the work missed. Excessive absence in any course will lead to loss of credit in that course, even though other requirements, such as tests, term-papers, and examinations, are met.

CLASSIFICATION OF STUDENTS

A student who has completed less than thirty credit hours in Columbian College, and who has registered his major at the Office of the Registrar, is classed as a *junior*. A student who has completed thirty credit hours in Columbian College, including at least one course in his major, is classed as a *senior*. A student who has satisfactorily completed the work for the Bachelor's degree, and whose program of study has been approved and filed in the Office of the Registrar, is classed as a *master in course*.

INDEPENDENT STUDY PLAN

Under the independent study plan a student of demonstrated capacity, with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the division in which the subject falls. Credit under this plan is limited to the specific course-credits as designated in the list of courses of instruction in the CATALOGUE.

CORRESPONDENCE AND HOME-STUDY COURSES

No credit is given for work done by correspondence or in home-study courses.

THE BACHELOR'S DEGREES

Upon the satisfactory completion of the undergraduate requirements of Columbian College, the degree of Bachelor of Arts or Bachelor of Science is conferred.

In cooperation with the School of Medicine a seven-year curriculum leading to the combined degrees of Bachelor of Arts and Doctor of Medicine is offered.

REQUIREMENTS FOR THE DEGREES

RESIDENCE

For the residence requirement, see pages 44-45. Students intending to transfer to Columbian College from a non degree-granting division of the University are advised that not more than 45 credit hours may be transferred.

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 41 and 42.

In order to graduate, a student must have a general quality-point index of at least 2.00. In addition, he must have a quality-point index of at least 2.50 in his major subject.* Grades in courses taken at other institutions are not considered in computing the quality-point index.

In computing the quality-point index in the major, all second-group and third-group courses in the major field taken at The George Washington University are included, even though minimum requirements for the major may have been exceeded, except when registration for graduate credit is approved. Grades received in first-group courses are not considered.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Suspension.—A student who has a quality-point index below 1.50 or who is placed on probation for a third term, whether successive or after an interval, is suspended.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

For the purpose of these rules, the summer sessions are considered a term.

The foregoing scholarship rules are applied to a student with a limited schedule only when he has undertaken a minimum of fifteen credit hours.

* Except in a Field-of-Study Major, in which ability to pass the Major Examination is accepted as meeting qualitative requirements in the major field.

CURRICULUM REQUIREMENTS

The curriculum requirements for the Bachelor's degrees include at least sixty credit hours beyond the requirements of the Junior College (the curriculum in *Arts and Letters* or in *Science*) and the satisfactory completion of the major. Each program must be approved by the major adviser and by the Dean.

At least twenty-four credit hours of the last sixty credit hours counted towards the Bachelor's degree must be taken in subjects* not included in the major field or department. The student should consult his major adviser at each registration regarding the inclusion in his program of suitably distributed electives, with a view to meeting this requirement before graduation.

Except for students registered for the combined degrees of Bachelor of Arts and Doctor of Medicine, not more than twelve credit hours of professional courses may be included in the one hundred and twenty credit hours required for the Bachelor's degrees in Columbian College. Columbian College students electing professional courses under this rule must obtain the approval, in advance, of the Dean of Columbian College. Ordinarily courses in Physical Education and technical courses in Education will not be approved for credit toward a degree in Columbian College.

After selecting a curriculum, a student may not change to another except by permission of the Dean and on condition that he fulfill the requirements of the curriculum to which he changes as of the date when the change is approved by the Dean.

Each student is required to select and file with the Registrar a choice of major upon entering Columbian College. He may change the major only with the consent of the Dean and of the department or division concerned, and must meet the requirements for the major to which he changes as of the date when the change is approved by the Dean.

First-group courses may be required as prerequisites to undergraduate-major programs, but because of their introductory character may not be counted as part of such programs. (See "Explanation of Course Numbers".)

Students transferring from other institutions with major requirements wholly or substantially met will, nevertheless, be required to complete satisfactorily at least twelve credit hours of approved work in the major field in The George Washington University in order to receive a Bachelor's degree. This work will count as part of the minimum residence requirement.

* Art, Biology, Botany, Chemistry, Classical Languages and Literatures, Economics, English, Geography, Geology, Germanic Languages and Literatures, History, Journalism, Mathematics, Philosophy, Physics, Political Science, Psychology, Religion, Romance Languages and Literatures, Sociology, Speech, Statistics, Zoology.

Examinations for Waiving Curriculum Requirements.—A student desiring to omit a required or prerequisite course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum or prerequisite requirement in that subject and may qualify for registration in an advanced course. Passing of this examination shall not entitle him to any credit toward the degree. A student desiring to take such examinations should make written request of the Dean and pay the required fee at the Office of the Comptroller before the date of the examination specified in the University calendar.

Use of Correct English.—Any student whose English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean and to the Committee on the Use of English. The Chairman of the Committee may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed by failure to make up any such deficiency in English to the satisfaction of the Committee and the Dean.

Bachelor of Arts

The work of the junior and senior years, including a major in one of the following major fields, must be approved by the major adviser and by the Dean.

Major Fields.—American Thought and Civilization, Art (Appreciation or Drawing and Painting), Biology, Botany, Chemistry, Economics, English Literature, French Literature, Geography, Geology, Germanic Languages and Literatures, History, Journalism (News-Editorial or Public Relations), Latin American Civilization and Culture, Mathematics, Philosophy, Physics, Political Science, Psychology, Religion, Sociology, Spanish American Literature, Spanish Literature, Speech, Statistics, Zoology.

Combined Degrees of Bachelor of Arts and Doctor of Medicine.—A candidate for the combined degrees of Bachelor of Arts and Doctor of Medicine must: (1) complete the premedical college requirements (see pages 15-16); (2) fulfill the Junior College Arts and Letters requirements (see page 60); (3) fulfill the Columbian College residence requirement of at least thirty credit hours; (4) obtain the approval of the Dean of Columbian College at the time of entering the School of Medicine; (5) obtain the recommendation of the Dean of the School of Medicine at the completion of all prescribed courses in the first year of the School of Medicine, at which time the degree of Bachelor of Arts will be conferred (professional work taken at another institution will not satisfy the major requirement for the combined degrees); (6) maintain throughout the entire course the scholarship level required for graduation.

Bachelor of Science

The work of the junior and senior years, including a major in one of the sciences mentioned below, must be approved by the major department or division and by the Dean.

Biological Sciences

Biology
Botany
Zoology

Physical Sciences

Chemistry
Mathematics
Physics
Statistics

THE UNDERGRADUATE MAJOR*

There are two types of undergraduate majors: the field-of-study major and the departmental major.

THE FIELD-OF-STUDY MAJOR

Each Field-of-Study Major covers a carefully worked out field of coordinated study and is under the supervision of the division or divisions concerned.

The *Field-of-Study Major* requires no specific number of credit hours, no specific program of courses, and no specific quality-point index for the major, although the student is required to meet the over-all general requirements for the degree (at least 120 credit hours, plus required physical education, with a quality-point index of at least 2.00). The Major Examination in the Field-of-Study Major replaces all of the traditional quantitative and qualitative requirements for a major. Ability to pass the Major Examination is assumed to be a convincing demonstration that the student possesses the breadth, depth, and quality of knowledge of his major usually defined in terms of credit hours, courses, grades, and a better-than-average quality-point index. A pamphlet prepared under the direction of the adviser in the field of study and obtainable either from the adviser or from the Office of the Dean of Columbian College provides the information needed by the prospective student, who should place himself under the direction of the appropriate adviser immediately upon completing Junior College work and beginning his junior year (the first senior-college year) in Columbian College.

The Field-of-Study Major places special emphasis on the intellectual development of the individual student. Programs in the same major may vary, depending upon the individual student's background, previous study, reading habits, and aptitudes. The student is expected to consult

* For a complete description of the undergraduate major, see the special bulletin.

his adviser frequently, and the special proseminar offered in the field gives him further opportunity for individual advice and direction in pursuing a program especially adapted to his needs and abilities. A close student-adviser relationship is essential for the student's success under the Field-of-Study Major plan.

The following Field-of-Study Majors are offered: (1) American Thought and Civilization, (2) Biology, (3) English Literature, (4) French Literature, (5) History, (6) Latin American Civilization and Culture, (7) Philosophy, (8) Spanish American Literature, (9) Spanish Literature, (10) Statistics, (11) Zoology.

The major in Biology extends broadly over the work of its division; and those in American Thought and Civilization and in Latin American Civilization and Culture involve studies in two divisions, those of Languages and Literatures and of Social Studies. The other Field-of-Study Majors, with the exception of the major in Spanish American Literature, replace departmental majors in their respective fields. A candidate for a Bachelor's degree with a major in Biology, English Literature, French Literature, History, Philosophy, Spanish Literature, Statistics, or Zoology must elect a Field-of-Study Major.

Proseminar in the Major

For the convenience of the student a proseminar is offered in each field of study, under the supervision of the division in which the major is taken. This course, planned and administered by the professor or adviser of the major subject, will advise, guide, and instruct the student in his reading, study, and laboratory exercises in order to assist him in gaining a coordinated knowledge of his field. It is a presentation of the content and methods of the major field as a whole through the organization and coordination of the knowledge obtained in the various formal courses in the major subject and of material not usually included in such courses. This course is not required. Six credit hours, but no qualitative grade, may be assigned. When registered in this course, the student will have the privilege of visiting, subject to the approval of the instructor, any other course offered in the College. (Regular attendance in a course, either for credit or as an auditor, requires registration and payment of tuition.) Proseminars are open only to the student who has been accepted as a candidate under that specific major.

THE MAJOR EXAMINATION

The Major Examination will normally be taken by the student at the close of the senior year; in the case of a student on a limited schedule, the Major Examination may be taken not earlier than one calendar year before graduation. A student who fails to pass a Major Examination

may, at the discretion of the Columbian College Committee on Studies, be reexamined at a later regular major-examination period. The educational committees of the respective divisions will have general supervision of the preparation, reading, and grading of Major Examinations. Major Examinations will be held in each regular term on dates fixed by the respective educational committees, but in no case later than January 15 for the fall term, May 15 for the spring term, and August 7 for the summer term.

DEPARTMENTAL MAJORS

Departmental Majors, unlike *Field-of-Study Majors*, are specifically defined in terms of credit hours, required courses, and the attainment of a quality-point index of at least 2.50 in all second-group courses taken in the major field. The minimum specific requirements for Departmental Majors are listed below the staff of instruction of the department concerned in the section of the CATALOGUE devoted to courses of instruction. The Executive Officer of the Department, or his representative at registration, should be consulted concerning the student's program of courses, and the entire program, including electives, must be approved by the Department. The student is also expected to consult the Executive Officer or adviser in all matters affecting his program of studies, such as changes, substitutions, or withdrawals, and especially concerning his progress in his courses. As far as possible the close student-adviser relationship developed in the *Field-of-Study Major* will be cultivated also in *Departmental Majors*.

Until further notice Departmental Majors will be offered in the following: Art (Appreciation, Drawing and Painting), Botany, Chemistry, Economics, Geography, Geology, Germanic Languages and Literatures, Journalism (News-Editorial or Public Relations), Mathematics, Physics, Political Science, Psychology, Religion, Sociology, and Speech.

THE MASTER'S DEGREES

Upon the satisfactory completion of the graduate requirements of Columbian College, the degree of Master of Arts or Master of Science is conferred.

DEFINITION OF THE MASTER'S WORK

The study leading to the degree of Master of Arts or Master of Science is a comprehensive survey of a field of knowledge. It is a continuation of the work of the student's undergraduate major and involves a greater acquaintance with scholarly method.

The student must satisfy certain minimum requirements as to previous

preparation, residence, ability to read an approved modern foreign (European) language, and courses taken; but these requirements, while essential, are regarded primarily as qualifying measures. The student's knowledge of his field, as demonstrated by his thesis and by the results of his Master's Examination (together with such other examinations involving special skills or techniques as the department or division may require), is the basis upon which the Master's degree is conferred.

MASTER OF ARTS

Graduate work leading to the degree of Master of Arts is offered in the following fields:

American Literary and Cultural History, Bacteriology, Biochemistry, Biology, Botany, Chemistry, Economics, English and American Literature, English Literature, French Literature, Geography, Geology, Germanic Languages and Literatures, History, Latin American Civilization and Culture, Mathematics, Pharmacology, Philosophy, Physics, Physiology, Political Science, Psychology, Sociology, Spanish American Literature, Spanish Literature, Statistics, Zoology.

Special programs involving coordinated work in two or more departments may be arranged with the approval of the appropriate division or divisions.

MASTER OF SCIENCE

Graduate work leading to the degree of Master of Science is offered in the following fields:

Anatomy, Bacteriology, Biochemistry, Biology, Botany, Chemistry, Mathematics, Pharmacology, Physics, Physiology, Psychology, Statistics, Zoology.

Special programs involving coordinated work in two or more departments may be arranged with the approval of the appropriate division or divisions.

REQUIREMENTS FOR THE DEGREES

RESIDENCE

An academic year of residence in Columbian College is required, i.e., completion of a minimum of thirty credit hours of work including the thesis, which is counted as the equivalent of six credit hours of course work. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than twenty-seven weeks. Not more than twelve credit hours (which must be approved in advance by the Dean of Columbian College) may be taken in another school or division of this University, and such work may not be counted toward both a degree in that school or division and the Master's degree in Columbian

College. No part of the minimum requirement may be taken elsewhere. All work for the degree of Master of Arts or Master of Science must be completed within a maximum of three years, unless the Dean's Council considers the circumstances so unusual as to justify an extension of time.

SCHOLARSHIP

A Master's candidate must attain the grade of "Ex." (excellent) in at least six credit hours of the course requirements for the degree in order to receive the Master's degree.

A student whose scholarship is unsatisfactory may be suspended by the Dean upon recommendation of the Division under which the student is working. A Master's candidate who accumulates nine credit hours or more of "Unsat." (including grades of "C" or lower in prerequisite courses) will be automatically suspended. Regarding the system of grading, see pages 41 and 42.

PROGRAM OF STUDIES

The student's program of studies must be outlined in detail at the beginning of his work, in triplicate, on forms available at the Office of the Dean. Each program is subject to the approval of the department and the division. The program may be revised as the occasion requires, but any change necessitates a repetition of the procedure just described.

Courses numbered from 1 to 100 may not be credited toward the Master's degrees, but may in certain instances be required as a basis for advanced work. At least six credit hours of the course work required for the Master's degree must be taken in courses numbered over 200. Courses numbered over 100 may be credited toward the degree, provided the completion of additional work has been certified by the appropriate officer of instruction. (See "Explanation of Course Numbers".)

A student who expects to continue his studies for the degree of Doctor of Philosophy after receiving the Master's degree is strongly advised so to plan his program from the beginning that work for the lower degree may help to prepare him for the higher.

FOREIGN LANGUAGE REQUIREMENT

Before being admitted to candidacy the student must show that he has a reading knowledge (certified by the appropriate foreign-language department) of at least one modern foreign (European) language, selected by the division under which he is studying. A student whose field is a modern foreign language or literature may not offer that language in satisfaction of the reading-knowledge requirement. Any Master's candidate who chooses to meet the Master's language requirement in French

or German and has not passed the French or German foreign language examination by the end of fifteen attempted credit hours must register for French 107 or German 107 as part of his next registration. The Master's reading examination will be given during the first week of the course and again at the end. Those who pass the first examination are excused from the course and will receive a refund of tuition. In the case of Spanish no similar course is available at present. Students who expect to take the reading examination in Spanish, or any other approved language besides French or German, should notify the Dean at the time of registration.

ADMISSION TO CANDIDACY

A student must be admitted to candidacy before he begins the last half of his work for the Master's degree. Application for admission to candidacy is made on a form obtained at the Office of the Dean, and must be approved by the appropriate representative of the department or division and by the Dean. If a prospective candidate, in his previous academic work, has not substantially satisfied the prerequisites for the Master's degree, including the undergraduate major as defined by the appropriate department or division, he will not be admitted to candidacy until such deficiency has been made up. He may make up his deficiencies by electing appropriate courses in addition to those counted towards his degree.

THE MASTER'S THESIS

The thesis may be of a research, expository, critical, or creative type. The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final term. The choice of the thesis subject must be approved by the professor in charge of the student's field and recorded in the Office of the Registrar by the date announced in the University calendar. Registration for the thesis is ordinarily made on the basis of three credit hours a term for two successive terms. In exceptional cases, and with the approval of the professor in charge of the thesis, the student may register for the entire six credit hours during a single term. The typewritten thesis in its final form must be submitted by the student for the approval of the professor in charge of the student's field and of the educational committee of the division concerned, not later than the date announced in the University calendar. Requirements regarding the form of the

thesis are stated on page 45, and additional information will be supplied by the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period the student must register for it again, and pay tuition on the same basis as for a repeated course.

THE MASTER'S EXAMINATION

In addition to such other examinations as may be required, the candidate must pass a general written examination on the major subject. Examinations will be held on dates fixed by the respective educational committees, but in no case later than January 15 for the fall term, May 15 for the spring term, and August 7 for the summer term. The provisions of the field-of-study plan for undergraduate majors which concern the general examination for the major also apply to the Master's Examination. A candidate who fails to pass the Master's Examination may, in exceptional circumstances and with the specific approval of the division concerned, repeat the examination, but only after the lapse of one term. If he fails a second time, no further opportunity to take the examination will be permitted.

THE GRADUATE COUNCIL

Robert Whitney Bolwell, Ph.D., *Chairman of the Graduate Council*

MEMBERS OF THE COUNCIL *

- Thomas Benjamin Brown, Ph.D., *Professor of Physics*
 Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*
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 Walter Lynn Cheney, Ph.D., *Professor of Physics*
 James Henry Taylor, Ph.D., *Professor of Mathematics*
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 Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*
 George Gamow, Physics D., *Professor of Theoretical Physics*
 Warren Reed West, Ph.D., *Professor of Political Science*
 Frank Mark Weida, Ph.D., *Professor of Statistics*
 Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
 Leland Wilbur Parr, Ph.D., *Professor of Bacteriology*
 Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*
 Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
 Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry*
 Merle Irving Protzman, Ph.D., *Professor of Romance Languages*
 Florence Marie Mears, Ph.D., *Professor of Mathematics*
 Wood Gray, Ph.D., *Professor of American History*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology*
 Ira Bowers Hansen, Ph.D., *Professor of Zoology*
 Paul William Bowman, Ph.D., *Professor of Biology*
 Lawson Edwin Yocum, Ph.D., *Professor of Botany*
 Arthur Edward Burns, Ph.D., *Professor of Economics*
 †John Withrow Brewer, Ph.D., *Professor of International Law*
 Louis Clark Keating, Ph.D., *Professor of Romance Languages*
 Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*
 Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*
 §Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

* The President of the University, the Dean of Faculties of the University, and the Registrar of the University are members of the Council.
 † On sabbatical leave spring term 1953-54.
 ‡ On leave of absence 1953-54.

Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

George Winchester Stone, Jr., Ph.D., *Professor of English Literature*

Fred Salisbury Tupper, Ph.D., *Professor of English Literature*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

Donald Stevenson Watson, Ph.D., *Professor of Economics*

Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*

Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*

William Webster Diehl, Ph.D., *Adjunct Professor of Mycology*

Antonio Alonso, A.M., *Associate Professor of Spanish*

Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Associate Professor of Political Science*

Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*

*Roderic Hollett Davison, Ph.D., *Associate Professor of European History*

Reuben Esselstyn Wood, Ph.D., *Associate Professor of Chemistry*

Sam Clark Munson, Ph.D., *Associate Professor of Biology*

Mary Louise Robbins, Ph.D., *Associate Professor of Bacteriology*

William Frederick Sager, Ph.D., *Associate Professor of Chemistry*

Harold George Mandel, Ph.D., *Associate Professor of Pharmacology*

Don Carlos Faith, Ph.D., *Associate Professor of Educational Psychology*

James Norman Mosel, A.M., *Assistant Professor of Psychology*

Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*

CONSULTANTS IN RESEARCH

Joseph William Ballantine, A.B., LL.D., *Consultant, Brookings Institution; The Far East*

Zoltan Bay, Ph.D., *Research Associate, The George Washington University; Electronics*

George McSpadden Briggs, Ph.D., *Chief, Nutrition Unit, Laboratory of Biochemistry and Nutrition, National Institute of Arthritis and Metabolic Diseases; Animal Nutrition*

Dean Burk, Ph.D., *Head, Cytochemistry Unit, National Cancer Institute; Tissue Respiration in Biochemistry*

Gerhard Colm, Dr. rer. pol., *Chief Economist, National Planning Association; Public Finance; National Income*

Paul Simon Galtsoff, Ph.D., *Senior Biologist, Fish and Wildlife Service, United States Department of the Interior; Invertebrate Zoology*

Fred Latimer Hadsel, Ph.D., *Office of German and Austrian Affairs, Division of German Political Affairs, United States Department of State; International Politics and Organization*

* On leave of absence 1953-54.

- François Naftali Frenkiel, Ph.D., *Physicist, Applied Physics Laboratory, The Johns Hopkins University; Aerodynamics*
- Henry Furness Hubbard, Ph.D., *Personnel Officer, Department of General Administration, District of Columbia Government; Personnel Psychology*
- James Manson Hundley, B.S., M.D., *Assistant Chief, Laboratory of Biochemistry and Nutrition; Chief, Section on Physiology and Biochemistry of Nutrition, National Institutes of Health; Physiology of Nutrition*
- William Crane Johnstone, Jr., Ph.D., *Director of the Office of Educational Exchange, United States Department of State; International Relations: The Far East*
- Solomon Kullback, Ph.D., *Chief, Research and Development Division, United States Department of Defense; Statistics: Multivariate Analysis*
- Ross Clayton MacCardle, Ph.D., *Principal Cytologist, Laboratory of Pathology, National Cancer Institute; Histology*
- Amedeo S. Marrazzi, M.D., *Chief, Clinical Research Division, Chemical Corps Medical Laboratories, Army Chemical Center; Neuropharmacology*
- Ladislau Laszlo Marton, Ph.D., *Physicist, Atomic Physics, Electronics Division, National Bureau of Standards; Electron Optics*
- Elliott Waters Montroll, Ph.D., *Research Professor, Institute for Fluid Dynamics and Mathematics; Theoretical Physics*
- John Rudolph Pellam, Ph.D., *Acting Chief, Cryogenics Section, Division of Heat and Power, National Bureau of Standards; Low Temperature Studies*
- Jacques Jacobus Polak, Ph.D., *Assistant Director, Research Department, International Monetary Fund; International Economics*
- Sanford Morris Rosenthal, M.D., *Chief, Section on Pharmacology and Toxicology, National Institute of Arthritis and Metabolic Diseases; Cardiovascular Shock*
- Waldo Lasalle Schmitt, Ph.D., *Head Curator of Zoology, United States National Museum; Invertebrate Zoology: Crustacea*
- Leonard Peter Schultz, Ph.D., *Curator of Fishes, United States National Museum; Vertebrate Zoology: Ichthyology*
- Lyman Bradford Smith, Ph.D., *Associate Curator, Division of Phanerogams, Department of Botany, Smithsonian Institution; Taxonomy*
- Alberto Vázquez, Ph.D., *Foreign Affairs Specialist, Division of Research for American Republics, Office of Intelligence Research, United States Department of State; Latin American Literature*
- Erwin Paul Vollmer, Ph.D., *Research Physiologist, Naval Medical Research Institute; Endocrinology*

Henry Welch, Ph.D., *Chief, Division of Penicillin Control and Immunology, United States Food and Drug Administration; Antibiotics*

Willard Hull Wright, D.V.M., Ph.D., *Scientist Director, United States Public Health Service; Chief, Zoology Laboratory, National Institutes of Health; Parasitology*

Ralph Aubrey Young, M.B.A., Ph.D., *Director, Division of Research and Statistics, Board of Governors, Federal Reserve System; International Finance*

GENERAL INFORMATION

INTRODUCTORY

The Graduate Council offers a program of advanced study and research leading only to the degree of Doctor of Philosophy. It was established in 1930 to replace the Graduate School which had formerly administered work for the Master's as well as the Doctor's degrees. The Graduate Council provides a doctoral discipline which moves freely across administrative lines dividing departments of instruction or fields of study. It gives personal supervision to a limited number of students, each of whom has his own consultative committee, examinations, and research direction.

FIELDS OF RESEARCH

The following fields of research have been authorized by the Graduate Council as those in which doctoral investigations and dissertations may be undertaken. The supporting fields of study required of all candidates for the degree of Doctor of Philosophy are specified for each individual student by his Consultative Committee before admission to study under the Council.

This list of fields is subject to such changes as the educational resources of the University may direct. The prospective student may address preliminary inquiries concerning his research interests to the member of the Council who is in charge of the field, or to the Chairman of the Graduate Council.

Anatomy

Histology

MacCardle

Bacteriology

(1) Intestinal Microbiology; (2) Immunity in Tuberculosis; (3) Problems in Medical Bacteriology with especial reference to Diagnostic Methods and Immunization

Part

(1) Intestinal Microbiology; (2) Immunology: Antigenic Analysis

Antibiotics

Virology

Griffin
Welch
Robbins

Biochemistry

(1) Carbohydrate Metabolism; (2) Nutrition (emphasis on vitamins); (3) Pathological Chemistry

Roc

Lipids

Treadwell

Tissue Respiration

Burk

Animal Nutrition

Briggs

Biology

Cytology

Bowman

Botany

(1) Mycology; (2) Plant Pathology

Diehl

Plant Physiology

Yocum

Taxonomy

Smith

Chemistry

Organic

Wrenn

Inorganic

Naeser

Physical: Solubilities

Van Evera

Physical: Kinetics and Electrochemistry

Wood

Physical-Organic: Reaction Mechanisms

Sager

Economics

Economic Theory: (1) Economic Fluctuations; (2) History of Economic Thought

Burns

Economic Policy: (1) Economic Planning; (2) Public Finance

Watson

(1) National Income; (2) Public Finance

Colm

International Economics

Polak

International Finance

Young

History

European: Nationalism

Kayser

European: (1) Diplomatic since 1815; (2) The Modern Near East

Davison

United States: (1) Social; (2) Economic

Gray

United States: (1) Diplomatic; (2) Political

Merriman

Law

Jurisprudence

Collier

Literatures and Languages

English: (1) Sixteenth Century Drama; (2) Seventeenth Century Drama

Tupper

English: Eighteenth Century Drama

Stone

American: Literary Nationalism

Bolwell

Romance: (1) Romance Linguistics; (2) Old and Middle

Doyle

French; (3) Old Spanish

Romance: Modern Spanish Literature	Alonso
Romance: Latin American Literature	Vázquez
Romance: (1) Sixteenth Century French Literature; (2) Modern French Literature	Keating
Romance: Seventeenth Century French Literature	Protzman

Mathematics

Algebra: Finite Groups	Johnston
Geometry: Differential Geometry	Taylor
Analysis: Infinite Series	Mears

Pharmacology

(1) Chemotherapy; (2) Drug Metabolism	Smith
Neuropharmacology	Marrazzi
(1) Drug Metabolism; (2) Medicinal Chemistry	Mandel

Physics

Experimental: Electronics	Brown
Experimental: Electronics	Bay
Electron Optics	Marton
Low Temperature Studies	Cheney
Low Temperature Studies	Pellam
Theoretical: (1) Relativity; (2) Nuclear; (3) Astrophysics	Gamow
Theoretical: The Solid State	Montroll
Theoretical: Aerodynamics	Frenkiel

Physiology

(1) Nutrition and Endocrines; (2) Cardiovascular System	Albritton
(1) Blood Pressure Studies; (2) Neuro-Muscular Studies	Leese
Physiology of Nutrition	Hundley
Endocrinology	Vollmer
Cardiovascular Shock	Rosenthal

Political Science

United States: (1) The Legislative Process; (2) Governmental Organization and Administration	West
International: The Far East	Johnstone
International: The Far East	Ballantine
International: Comparative Government and Political Theory	Kraus
International: International Politics and Organization	Hadsel
International Law: (1) War and Neutrality; (2) Arbitration	Brewer

Psychiatry

Problems of Treatment (M.D. degree required for admission)	Overholser
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Psychology

Counseling and Guidance	Dreese
(1) Psychological Measurements; (2) Abnormal Psychology	Hunt

Social Psychology
Personnel Psychology
Personnel Psychology
Military Counseling and Guidance
Experimental

Tuthill
Hubbard
Moell
Faith
Fox

Statistics

(1) Theoretical: Probability and Sampling; (2) Applied: Econometrics
Multivariate Analysis

Weida
Kullback

Zoology

Entomology: Insect Physiology
Invertebrate: Molluscan Morphology and Physiology
Invertebrate: Crustacea
Parasitology: Parasitic Protozoa
Vertebrate: Embryology and Morphogenesis
Vertebrate: Ichthyology

Munson
Gaitsoff
Schmitt
Wright
Hansen
Schultz

ADMISSION PROCEDURE

For admission the student must possess adequate preparation for advanced study, including satisfactory Bachelor's and Master's degrees, or the equivalent, together with acceptable personal qualities and a capacity for creative scholarship. Previous graduate study should have been in the same general field as that proposed for doctoral study.

Before applying, the student should have personal interviews with the Chairman of the Council and the professor in charge of the central field of study.

After application blank and transcripts of previous academic training have been filed the student must demonstrate his ability to read either French or German in the field of his major interest. Both French and German are required without exception, but only one at the time of admission. The student then meets his personal admission committee which makes its recommendations to the Council. The committee may specify additional prerequisites for the student's doctoral program.

STUDY FOR THE COUNCIL FELLOWSHIP EXAMINATION

The discipline for the degree is divided into two stages. The first is made up of study in related fields of learning which support the general area of research concentration, culminating in the Council Fellowship Examination. The second stage is composed of research and investiga-

tion of a particular project in a special field and the presentation of such research in a written dissertation, culminating in the Final Examination.

At the beginning of the student's program of study leading to the Council Fellowship Examination, a consultative committee is assigned to direct his work in a group of fields of learning, usually five or six in number, deemed necessary to insure his breadth of knowledge and general competence for continuing independent research, as well as to support the dissertation project in his central field. Members of the consultative committee will advise the student concerning the scope and content of these supporting fields, and will assist the student in preparation for his examination in them.

This advanced study may be done by attending courses of instruction and graduate seminars, by conference with members of the student's committee, and by independent means. The examination, however, not credits or grades for work done in courses, is the sole test of the student's ability to enter upon the second phase of his doctoral discipline. The examination is a series of written tests usually extending over a period of one week. The major portion of a day is given to each part of the examination covering one of the fields of study on the student's program. If the results of the examination are satisfactory the student is admitted as a Fellow of the Graduate Council, to pursue his specialized study and research under the supervision of a member of the Council.

RESEARCH, THE DISSERTATION, AND THE FINAL EXAMINATION

After the student has been inducted as a Fellow of the Council and his research program has been arranged, he is responsible only to the member of the Council who directs his research project. As a Fellow, he may attend general meetings of the Council and participate in the programs of research discussion, and enjoy unrestricted use of all the academic facilities of the University. When necessary, the Graduate Council makes provision for sending the Fellow to some other institution, library, or laboratory for special study in connection with his doctoral investigation.

The doctoral dissertation is required of all Fellows as evidence of ability to perform scholarly research and to interpret its results. An extended summary of the dissertation is published in a periodical volume by the University for distribution to other institutions and libraries. Printed copies of detailed regulations concerning the dissertation are supplied to all candidates for the doctorate.

When the completed dissertation has been approved by the member of the Council in charge of the research project, the Fellow is presented for his final examination. This examination is oral and open to the public. The committee of examiners includes not only members of the

Council competent in the research field or in closely related subjects, but also at least two qualified experts from other research institutions brought to the University to participate in the examination. If the Fellow satisfies the examining committee concerning the high quality and originality of his contribution to knowledge as well as his mastery of the scholarship and research techniques of his field, the Council recommends him for the degree of Doctor of Philosophy.

POST-DOCTORAL STUDY

The Council expects its graduates to continue their interest in advanced study and research, and to contribute to its program. All graduates are listed as Associate Fellows and, upon request, will receive notices of all general meetings. They may continue any studies in the University without payment of tuition, and enjoy all University library privileges. Such graduates are required to pay only the usual residence fee in order to establish their active membership in the University. The use of laboratory space and equipment is contingent upon availability, and the cost of all laboratory or special library materials is paid by the graduate. Special arrangements for such privileges must be made with the Chairman of the Council. Post-doctoral work may not be applied toward any degree offered by the University.

REGULATIONS

Candidates and Fellows in the Graduate Council are subject to, and are expected to familiarize themselves with, the regulations regarding REGISTRATION, FEES AND FINANCES stated on pages 23-26, and the University regulations stated on pages 41-47.

RESIDENCE AND CONTINUOUS REGISTRATION

The Graduate Council expects all students to work on their doctoral programs in residence, although there is no formal regulation concerning the minimum amount of time of resident study either in preparation for the Council Fellowship Examination or as a Fellow of the Council engaged in doctoral research. The student who undertakes either part of the doctoral program on full or limited schedule must, in accordance with University regulations, maintain continuous registration under the Graduate Council even when the Council has granted a leave of absence for study or residence elsewhere. Failure to maintain registration in each term of the academic year disrupts the residence status of the student. In such case, the student must reapply for admission to the Council, under whatever new conditions and regulations are set up by his consultative committee or the member of the Council who directs his research.

TEACHING FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

A limited number of Teaching Fellowships are assigned annually to certain departments of instruction open to doctoral students registered under the Graduate Council. An announcement regarding qualifications and application for these fellowships will be sent upon request to the Office of the Graduate Council.

In many departments of instruction graduate assistants are appointed to assist in the academic program. Applicants should inquire directly of the executive officer of the department concerned regarding vacancies and details of appointment.

A pamphlet describing details of the Graduate Council program, together with a current list of fields of research offered by the Council, will be sent upon request to the Office of the Graduate Council.

THE SCHOOL OF MEDICINE

THE FACULTY •

Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Dean of the School of Medicine*

Thomas Martin Peery, A.B., M.D., *Director of Postgraduate Instruction*

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry*
Walter Freeman, Ph.D., M.D., *Professor of Neurology*
Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*
Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*
Roger Morrison Choisser, B.S., M.D., *Professor of Pathology*
Leland Wilbur Parr, Ph.D., *Professor of Bacteriology*
Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry*
Frederick A. Reuter, M.D., *Professor of Urology*
Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology*
Daniel Bruce Moffett, A.B., M.D., *Professor of Otolaryngology*
Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics*
John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology*
Brian Blades, A.B., M.D., *Professor of Surgery*
Paul Kenneth Smith, Ph.D., *Professor of Pharmacology*
James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*
Chester Elwood Leese, Ph.D., *Professor of Physiology*
Thomas McPherson Brown, A.B., M.D., *Professor of Medicine*
Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology*
Thomas Martin Peery, A.B., M.D., *Professor of Pathology*
William Woodrow Stanbro, M.D., *Professor of Radiology*
Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation*
Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
Charles Seymour Coakley, M.D., *Professor of Anesthesiology*
Claude Matthews McFall, LL.B., Ph.D., *Professor of Anatomy*
Ira Rockwood Telford, Ph.D., *Professor of Anatomy*
Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*
Radford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*
Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*
William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*

• The President of the University, the Dean of Faculties of the University, and the Registrar of the University are members of the Faculty.

William Herndon Jenkins, M.D., *Clinical Professor of Otolaryngology*

*Paul Calabrisi, A.M., *Associate Professor of Anatomy*

Victor Frederick Ludewig, A.B., B.S., *Superintendent of the University Hospital*

COMMITTEES ‡

THE DEAN'S COUNCIL

Joseph Hiram Roe
Brian Blades

Winfred Overholser
John Parks

COMMITTEE ON ADMINISTRATION OF THE UNIVERSITY HOSPITAL AND OUTPATIENT DEPARTMENT

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John Parks

Brian Blades

Thomas McPherson Brown

Victor Frederick Ludewig

COMMITTEE ON ADMISSIONS

John Parks, *Chairman*

Angus MacIvor Griffin

Charles Seymour Coakley

COMMITTEE ON CURRICULUM

Thomas Martin Peery, *Chairman*

Leland Wilbur Parr

John Parks

Brian Blades

Paul Kenneth Smith

Thomas McPherson Brown

COMMITTEE ON LIBRARY

Chester Elwood Leese, *Chairman*

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Brian Blades

Thomas McPherson Brown

Thomas Martin Peery

Carleton Raymond Treadwell

Paul Calabrisi

Victor Frederick Ludewig

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Angus MacIvor Griffin, *Chairman*

John Parks

Brian Blades

Paul Kenneth Smith

Thomas McPherson Brown

Thomas Martin Peery

Calvin Trexler Klopp

* On leave of absence 1953-54.

‡ The President of the University and the Dean of the School of Medicine are members ex officio of all committees.

COMMITTEE ON SCHOLARSHIP

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Leland Wilbur Parr

John Parks

Thomas McPherson Brown

Claude Matthews McFall

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Victor Frederick Ludewig, *Chairman*

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Brian Blades

Thomas McPherson Brown

Thomas Martin Peery

COMMITTEE ON HOSPITAL PRIVILEGES

Thomas McPherson Brown, *Chairman*

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Brian Blades

ADVISORY COMMITTEE ON POSTGRADUATE INSTRUCTION

Thomas Martin Peery, *Chairman*

Walter Freeman

Winfred Overholser

Preston Alexander McLendon

John Parks

Brian Blades

Thomas McPherson Brown

Clayton Bernard Ethridge

GENERAL INFORMATION

INTRODUCTORY

The School of Medicine of The George Washington University was opened in March 1825; of the medical schools now in existence in the United States, it is the eleventh in chronological order of founding. The University Hospital and Dispensary were established in 1898 and made a part of the organization of the School.

The School is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. The degrees of the School of Medicine are recognized by all state examining boards.

PLAN OF INSTRUCTION

The work of the School is organized under the following departments: Anatomy; Anesthesiology; Bacteriology, Hygiene, and Preventive Medicine; Biochemistry; Dermatology and Syphilology; Medicine; Military Science and Tactics; Neurology and Neurological Surgery; Obstetrics

and Gynecology; Ophthalmology; Otolaryngology; Pathology; Pediatrics; Pharmacology; Physical Medicine and Rehabilitation; Physiology; Psychiatry; Radiology; Surgery; and Urology.

The salient features in the method of instruction are thorough laboratory training, demonstrations, and clinical teaching, with recitations and lectures to clarify the many problems presented. Courses of clinical instruction are included in the announcements of the clinical departments. The clinical material in the various hospitals and outpatient departments is utilized to the fullest extent for both clinical instruction and laboratory work.

Each of the first three years of the medical curriculum is divided into two terms of sixteen weeks. First-year students begin their study with a one-week orientation program. Also in the first year students are given instruction in the arrangement of the medical library and the use of the bibliographic indexes and reference books. The senior year includes, in addition to the two sixteen-week terms, an eight-week summer term. One half of the senior class begins the summer term immediately upon completion of the junior year; the other half begins eight weeks later. Within certain limitations, students may elect the period of attendance and the service of assignment. There are no formal classes or examinations during this period.

EQUIPMENT AND FACILITIES

The George Washington University Hospital.—The hospital, with a capacity of 400 beds, was opened in 1948. This splendid edifice, which is one of the outstanding hospitals in the United States, is completely furnished with the latest and most scientific apparatus and equipment. Its purpose is to supplement existing hospital resources in the District of Columbia for the care of the sick and the injured; the education of physicians, nurses, and technicians; and the advancement of medical knowledge.

The hospital is staffed and controlled by the Faculty of the George Washington University School of Medicine and it provides excellent clinical material for the instruction of medical students. Virtually every specialty in the fields of medicine and surgery has assigned space and equipment in both the outpatient department and the bed-patient section of this modern institution.

Medical School Building.—The building housing the School of Medicine is a five-story structure with lecture rooms, classrooms, students' rooms, and the following laboratories: anatomy, histology and embryology, biochemistry, physiology, pathology, and clinical microscopy.

Laboratories.—A four-story laboratory building is adjacent to the main medical building. The major laboratories are for bacteriology, hygiene and preventive medicine, and pharmacology. They are fully

equipped to enable students to pursue adequately the laboratory courses and to acquire the technical skill necessary in modern clinical and investigative work.

Research Building.—The Research Building houses the George Washington University Cancer Clinic; special laboratories of the National Cancer Institute; and special laboratories concerned with the biochemical, pharmacological, and cytological aspects of cancer research; pharmacological laboratories for the synthesis and study of radiocarbon drugs; and other research laboratories of the Biochemistry, Physiology, and Surgery departments.

Medical Library.—The Medical Library contains a selected reference collection of more than 10,000 volumes, currently obtains important new medical works, and regularly receives the principal medical journals.

Inter-library loan service is maintained by close cooperation with other medical and scientific libraries throughout Washington and vicinity.

The Medical Library is open from 9:00 A.M. to 9:00 P.M. each class day, Monday through Friday, and from 9:00 A.M. to 1:00 P.M. Saturday.

The Medical Library maintains a branch in Room 6037-A of the University Hospital for reference, research, and inter-library loan service. It is open from 2:00 to 6:00 P.M. Monday through Friday.

GOVERNMENT LIBRARIES AND MUSEUMS

The Library of the Surgeon General's Office of the United States Army is the most complete general medical library in the world. In addition to its great collection of medical works, all leading medical periodicals of the world are available. This Library, as well as the Library of Congress, the Public Library, and the many excellent libraries of the various government departments, is available to students and teachers through a service maintained by the Medical School Library.

The Army Institute of Pathology affords opportunity for studying the conditions met in military and general medicine and surgery. Its collection of anatomical and pathological specimens is unequalled in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens, and the Department of Agriculture all afford opportunities for study in Medicine and its allied sciences.

CLINICS

The City of Washington, with about a million inhabitants, provides ample clinical material. The University Hospital and Outpatient Department furnish clinical facilities and a large proportion of the materials studied in the courses in pathology and clinical pathology.

The University Hospital.—All clinics are under the supervision of the

Dean, who is also Medical Director of the Hospital. This insures the highest possible utilization of available clinical material for teaching purposes and the proper supervision of clinicians and students; it brings the individual student into direct contact with patients and requires him to do, under authoritative supervision, the clinical and laboratory work necessary for diagnosis and treatment; and it permits proper interpretation of the conditions occurring during the progress of cases and promotes the keeping of adequate records. Clinical and clinico-pathological conferences are held in which the history of cases, the physical findings, laboratory records, and the post-mortem pathology when available, are presented and correlated.

The Outpatient Department.—The Outpatient Department has clinical facilities for each Service in the Hospital. Fourth-year students are assigned in rotation by section for clinical instruction in the Outpatient Department.

Cancer Clinic.—The facilities of the Cancer Detection Clinic are available to medical students. In addition the diagnosis and treatment of various forms of neoplasms are presented. The results of the treatment of neoplasms are evaluated by follow-up studies.

The Helen L. and Mary E. Warwick Memorial, for cancer and allied diseases, was affiliated with The George Washington University in July 1948. The purposes of this clinic are (1) to provide care for cancer patients, through group consultations within a cancer organization, and (2) to provide training for physicians in the field of oncology.

Gallinger Municipal Hospital.—Clinical instruction is available in all branches of medicine. A great wealth of clinical material is afforded in this hospital and by ordinance of the municipal authorities of the District of Columbia, members of the Faculty of this School of Medicine, who are nominated by this University, are assigned approximately one-third of the patients for treatment and clinical study. Third-year students serve their clinical clerkships at this institution.

Children's Hospital.—Clinical instruction in pediatrics, dermatology, and orthopedic surgery.

Emergency Hospital and Central Dispensary.—Clinical instruction in medicine, surgery, and the specialties.

St. Elizabeths Hospital.—Clinical instruction in mental and nervous diseases, medicine, post-mortem work, and gross pathology. This hospital with 6,800 beds is maintained by the United States Government. The psychiatric clinic is one of the largest in the world.

Mt. Alto Hospital.—Clinical instruction in medicine and surgery is available and fourth-year students are assigned in rotation by section for clinical clerkships.

Walter Reed General Hospital.—Clinical instruction is available in

surgery. Fourth-year students are assigned in rotation by section for clinical instruction.

ADMISSION, REGISTRATION, FEES AND FINANCIAL REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the regulations stated on pages 12-26.

Registration in the School of Medicine is for a period of one academic year. After the student has entered the courses of instruction he is obligated for the full tuition for the academic year. No part of the tuition will be refunded upon withdrawal or dismissal for any cause. Acceptance by the School of a student's fees does not in any way obligate the School to accept the student for any subsequent year, and the right is reserved to drop any student from the School whenever, in the interest of the student or the School, the Faculty deems it advisable to do so.

A fee of \$5 to defray the costs of completing the records for final consideration for admission must accompany each application. This fee applies to students whose premedical training was completed at this University as well as to students who have not previously attended this University. Fees for each term are \$375, payable in advance.

Because the number of applicants far exceeds the limit of each class, places can be reserved only for those qualified applicants who remit a deposit of \$100 which will be credited toward the tuition of the first term. Under no circumstances will this deposit be refunded.

Credit for work will not be given until, at the completion of a laboratory course, the student has replaced or paid for all articles of equipment or other University property which he has lost, broken, or destroyed. All breakage or loss not directly traceable to an individual student is assessed pro rata.

COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, etc.) is approximately as follows: first year, \$400; second year, \$250; third year, \$90; fourth year, \$80; total, \$820.

A fee of \$1 a term is charged for the use (optional) of a locker.

REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the general University regulations stated on pages 41-47.

ABSENCE

Absence consists in being away from a class or clinic during a scheduled period, entering after the class or clinic has begun, or leaving before either is dismissed.

Excuse for absence due to sickness must be accompanied by a certificate signed by the attending physician and must be filed in the Office of the Dean.

For every unexcused absence a department will deduct one-half of one per cent from the student's final grade in the subject involved.

GRADES

The following grading system is used: *A* (90-100); *B* (80-89); *C* (75-79); *D* (65-74) condition; *E* (below 64) failure; *Inc.*, incomplete. The passing grade in each subject is *C*.

A student who is conditioned in any subject will not be advanced until such condition is removed and then only by authority of the Committee on Scholarship. All conditions must be removed at the next make-up examination period provided for this purpose.

EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held at the end of each term.

A student who fails to appear at a regularly scheduled final examination will not be examined until the next regular examination, except by special permission of the Committee on Scholarship. For make-up examinations to remove conditions, a fee of \$5 will be charged for each subject.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations, except that students from those states and foreign countries which do not recognize the National Board may be exempted from Part II by action of the Committee on Scholarship.

PHYSICAL EXAMINATIONS

All first-year students are given a comprehensive physical examination upon admission to the School of Medicine. The students are informed of the findings and advised regarding such measures as will tend to maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School has maintained since 1938-39. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary

to reduce to a minimum the dangers from tuberculosis. Students are immunized against those diseases for which proven prophylactics exist.

THE DEGREE OF DOCTOR OF MEDICINE

Upon the satisfactory completion of the requirements of the School of Medicine, the degree of Doctor of Medicine is conferred.

REQUIREMENTS FOR THE DEGREE

Every candidate for graduation with the degree of Doctor of Medicine must be at least twenty-one years of age, of reputable character, and free of all indebtedness to the University. He must have satisfied the admission requirements, completed satisfactorily not less than four academic years of study as a matriculated student in Medicine, completed all required courses, and passed satisfactorily all prescribed examinations.

COMBINED ARTS AND MEDICINE CURRICULUM

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least ninety credit hours of prescribed college work (at least thirty credit hours and one year of residence must be completed in Columbian College, the senior liberal arts college), and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

HONORS

A candidate who has completed the four-year medical course with an average grade of *A* may be recommended for graduation "with distinction".

INTERN AND RESIDENT TRAINING PROGRAM

The George Washington University Hospital offers rotating-type internships as classified by the Interassociation Committee on Internships. Twenty-four internships of one year each are offered; thirteen in the Department of Medicine with emphasis on medicine, ten in the Department of Surgery with emphasis on surgery, and one in the Department of Pathology with emphasis on pathology.

Rotating Internships, Emphasis on Medicine.—Interns will be assigned to seven months of general medicine, two months on the surgical service, and one month each on neuro-psychiatry, pediatrics, and obstetrics and gynecology.

Rotating Internships, Emphasis on Surgery.—Interns will be assigned to the surgical service for nine months, to general medicine for two months, and to obstetrics and gynecology for one month.

Rotating Internships, Emphasis on Pathology.—Interns will be assigned to the pathology service for eight months, to general medicine for two months, and to surgery for two months.

A total of approximately forty-two approved residencies are offered in anesthesiology, cardiac disease, internal medicine, neurologic surgery, obstetrics-gynecology, oral surgery, pathology, physical medicine, psychiatry, roentgenology, surgery and thoracic surgery. Residency programs are of from one to four years depending upon the service. Appointments are for one year subject to renewal. In several of the fields there are affiliations with local voluntary and government hospitals.

Fellowships of one or two years are available to acceptable candidates in anesthesiology, cardiology, chest diseases, infectious diseases, outpatient service, physical medicine, rheumatic diseases, surgery and thoracic surgery.

For application blanks and further information, address the Superintendent, The George Washington University Hospital, Washington 7, D. C.

POSTGRADUATE INSTRUCTION

The School of Medicine offers annually a series of short intensive postgraduate courses, varying somewhat from year to year. The series is designed for physicians in practice. The significant advances in the various specialties are presented, together with summaries of older information.

The Kellogg Medical Lectures, inaugurated in 1948, are a series of evening lectures and clinics, presented by distinguished physicians from other cities, designed primarily for physicians practicing in Washington and the vicinity. They are also attended by the Faculty, postgraduate students, and members of the senior class of the School of Medicine.

During the academic year 1952-53 approximately 179 physicians were enrolled in postgraduate courses. For application blanks and further information, address the Director of Postgraduate Instruction, The George Washington University Hospital, Washington 7, D. C.

MEDICAL TECHNOLOGIST COURSE

The course for medical technologists consists of twelve consecutive months of didactic and practical work in all phases of clinical laboratory technique. The course meets the full requirements of the Registry of Medical Technologists of the American Society of Clinical Pathologists. Prerequisites are 60 credit hours (two academic years) of college work including required credits in biology and chemistry.

Two classes are accepted each year, one entering in September and the other in March. Enrollment in each class is strictly limited so that personal instruction can be given.

Upon satisfactory completion of the course a certificate is awarded and the candidate is eligible for the certifying examination given by the Registry of Medical Technologists.

For application blanks and further information, address the Director of Laboratories, The George Washington University Hospital, Washington 7, D. C.

THE LAW SCHOOL

THE FACULTY AND STAFF OF INSTRUCTION *

John Theodore Fey, LL.B., M.B.A., J.S.D., *Acting Dean of the Law School; Director of Continuing Legal Education*
Carville Dickinson Benson, A.B., LL.B., S.J.D., *Assistant Dean of the Law School*
Louis Harkey Mayo, B.S., LL.B., *Secretary of the Law School*

Charles Sager Collier, A.B., LL.B., S.J.D., *Professor of Law*
William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
James Oliver Murdock, Ph.B., LL.B., *Professor of Law*
Oswald Symister Colclough, B.S., LL.B., LL.D., *Professor of Law*
James Ward Morris, A.B., *Adjunct Professor of Law*
James Robert Kirkland, A.B., LL.B., LL.M., *Adjunct Professor of Law*
Bolitha James Laws, LL.B., LL.M., LL.D., *Adjunct Professor of Law*
Conder Caywood Henry, A.B., LL.B., *Adjunct Professor of Law*
John Wingfield Jackson, B.S., LL.B., *Adjunct Professor of Law*
Frank Hammett Myers, LL.B., LL.M., *Adjunct Professor of Law*
Alvin Leroy Newmyer, LL.B., *Adjunct Professor of Law*
John Albert McIntire, A.B., LL.B., *Professorial Lecturer in Law*
Justin Lincoln Edgerton, A.B., LL.B., *Professorial Lecturer in Law*
Philip Field Herrick, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
George Edward Monk, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
Charles Sylvanus Rhyne, LL.B., *Professorial Lecturer in Law*
Jennings Bailey, Jr., A.B., LL.B., *Professorial Lecturer in Law*
Frederick Bernays Wiener, Ph.B., LL.B., *Professorial Lecturer in Law*
Robert McKinney Cooper, Ph.M., J.D., *Associate Professor of Law*
Leroy Sorenson Merrifield, A.B., LL.B., M.P.A., *Associate Professor of Law*
John Patrick Burke, A.B., LL.B., *Associate Professor of Law*
Herman Israel Orentlicher, A.B., LL.B., *Associate Professor of Law*
John Theodore Fey, LL.B., M.B.A., J.S.D., *Associate Professor of Law*
David Benson Weaver, A.B., LL.B., *Associate Professor of Law*
Louis Harkey Mayo, B.S., LL.B., *Associate Professor of Law*

* The President of the University, the Dean of Faculties of the University, the Dean and the Assistant Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

Roger Allen Cunningham, B.S., LL.B., *Assistant Professor of Law*
 Glen Earl Weston, B.S., LL.B., *Assistant Professor of Law*
 Ernest McClain Jones, B.B.A., LL.B., *Assistant Professor of Law*
 William Thomas Mallison, Jr., A.B., LL.B., *Assistant Professor of Law*
 William Lester Griffin, A.B., LL.B., LL.M., *Lecturer in Law*
 John Joseph Czyzak, A.M., LL.B., *Lecturer in Law*
 Joseph Dach, LL.D., LL.B., *Lecturer in Law*
 Milton Paul Kroll, A.B., LL.B., *Lecturer in Law*
 Clinch Heyward Belser, A.M., LL.B., *Lecturer in Law*
 Joseph Patrick Driscoll, A.B., LL.B., *Lecturer in Law*
 Louis James Harris, A.B., LL.B., LL.M., S.J.D., *Lecturer in Law*
 Charles James Zinn, A.B., LL.B., LL.M., *Lecturer in Law*
 John Alexander Kendrick, A.B., LL.B., *Clerk of the Trial Practice Court*
 Dudley Graham Skinker, LL.B., *Associate Clerk of the Trial Practice Court*

COMMITTEES *

THE DEAN'S COUNCIL

Carville Dickinson Benson	James Forrester Davison
Charles Sager Collier	William Thomas Fryer
Robert McKinney Cooper	Leroy Sorenson Merrifield
James Oliver Murdock	

COMMITTEE ON ADMISSIONS

Carville Dickinson Benson, <i>Chairman</i>	
Louis Harkey Mayo	Harold Griffith Sutton

COMMITTEE ON GRADUATE STUDIES

James Forrester Davison, <i>Chairman</i>	
Charles Sager Collier	James Oliver Murdock
Robert McKinney Cooper	

COMMITTEE ON SCHOLARSHIP

Herman Israel Orentlicher, <i>Chairman</i>	
Carville Dickinson Benson	Louis Harkey Mayo

COMMITTEE ON CURRICULUM

Leroy Sorenson Merrifield, <i>Chairman</i>	
Herman Israel Orentlicher	Roger Allen Cunningham

* The President of the University, the Dean of Faculties of the University, and the Dean, the Assistant Dean, and the Secretary of the Law School are members ex officio of all committees.

LIBRARY COMMITTEE

James Oliver Murdock, *Chairman*
David Benson Weaver

Glen Earl Weston

GENERAL INFORMATION

INTRODUCTORY

LOCATION IN THE NATION'S CAPITAL

The George Washington University Law School, now in its 88th year, is the oldest law school in the District of Columbia. The School took part as a charter member in 1900 in the organization of the Association of American Law Schools and it has been an active member of the Association since that time. It is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

Of special significance is the location of the Law School in the Nation's Capital, the focal point of the law in action, both American and international. The work of the School goes on in this environment, presenting a unique opportunity for observation and study of federal agencies—judicial, legislative, and administrative. The years of residence at law school are years of participation in the life of the community, which, in the case of the George Washington University Law School, is the government of the United States by law. As a consequence, the study of law takes on added meaning, whether the goal be government service or private practice, general or specialized.

PROGRAMS OF STUDY

Traditionally the Law School has been national in the geographic distribution of its students. At the present time, men and women holding baccalaureate degrees from more than three hundred colleges and universities come from the forty-eight states, the territories, and several foreign countries to comprise the student body. As a consequence the programs of study leading to the degrees of Bachelor of Laws and Juris Doctor have been planned to provide instruction and training for the practice of law wherever the Anglo-American legal system obtains.

Graduate work leading to the degrees of Master of Laws and Doctor of Juridical Science is offered for those desiring further study and research in specialized fields of law.

Continuing legal education for members of the bar who desire to take advanced courses without being candidates for degrees is provided. Lawyers may take courses and seminars for this purpose as unclassified students.

Graduate work is offered also to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. There are two programs of study, one leading to the degree of Master of Comparative Law for the lawyers planning to return to their own countries, and the other leading to the degree of Master of Comparative Law (American Practice) for lawyers planning to remain in this country for the practice of law.

FALL, SPRING, AND SUMMER TERMS

The academic year consists of the fall and spring terms. Six terms of residence are required of candidates for the Bachelor of Laws degree in the morning division, eight for those in the evening division. Residence in the summer term, morning or evening, is counted on a proportional basis, the same as like residence during the fall or spring term.

Students may enter Law School at the beginning of any of the three terms.

MORNING AND EVENING DIVISIONS

The School maintains morning and evening divisions. The evening division conforms to the same standards as the morning division, including the same teaching staff.

HOURS OF INSTRUCTION

Morning sections: Monday through Friday, 9:10 A.M. to 1:00 P.M.
Trial Practice Court: Saturday, 9:30 to 11:30 A.M.

Evening sections: Monday through Friday, 5:50 to 7:40 P.M.

THE LIBRARY

The Law School Library of 30,000 volumes contains the official reports of the decisions of the courts of last resort of all the states prior to the National Reporter System and of fourteen states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reprint and English Law Reports; the United States statutes and codes; reasonably complete sets of statutes of all of the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; and the leading textbooks and legal periodicals.

The Library, which is on the fourth floor of Stockton Hall, is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday, 9:00 A.M. to 5:00

P.M.), and from 2:00 to 6:00 P.M. on Sunday. Books and other materials do not circulate and must be used in the library.

THE LAW REVIEW

The George Washington Law Review, published by the University, is edited and managed by students of the Law School under the supervision of Faculty advisers. It is devoted exclusively to state and federal public law. The location of the University in the National Capital, where the primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The *Review* organization includes a faculty editor-in-chief, an associate faculty editor, a faculty board of advisory editors, a board of departmental advisory editors, and a board of student editors. The student editors are chosen each year on the basis of scholarship.

THE STUDENT BAR ASSOCIATION

Every student in the Law School is a member of the Student Bar Association. This is organized to enable students to become better acquainted with problems of the profession, to foster professional ideals, and to bring about closer contact with members of the profession engaged in active practice of the law.

The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

An important activity is the Van Vleck Case Club Competition, which provides an opportunity for training in appellate advocacy. First and second year students participate as contestants before courts composed of members of the Faculty and the local bar. Senior law students of the Case Club also sit as judges. The final argument is held before a court composed of distinguished federal judges.

ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in thirty-nine law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating class of the Law School.

REGULATIONS

Students in the Law School are subject to, and are expected to familiarize themselves with, the following regulations and the regulations con-

cerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26, and the University regulations stated on pages 41-47.

AMOUNT OF WORK

Students without substantial outside employment may take a program of studies of fourteen hours a week in which the majority of hours must be in the morning sections. Students with substantial outside employment must take a limited program of studies not exceeding ten hours a week. Students taking a majority of their classes in the evening may not take more than ten hours a week. A minimum schedule of ten hours in the morning division and six hours in the evening division is required except in exceptional circumstances when authorized by the Dean.

ATTENDANCE

Regular attendance at classes is required and is necessary for successful work. A student who is deficient in class attendance in any course may, by action of the Faculty, be barred from taking the examination.

Attendance at classes is limited to students registered to take them for credit. "Auditing" classes is not permitted.

RESIDENCE REQUIREMENTS

Attendance in the morning classes for the fall and spring terms is counted as residence for an academic year. Attendance in the evening classes for the fall and spring terms is counted as residence for three-fourths of an academic year. Students for whom schedules of less than ten and six hours in the morning and evening divisions, respectively, are authorized will receive residence credit on a proportional basis. Attendance throughout the summer term, morning or evening, is counted on a proportional basis, the same for residence purposes as like attendance during the fall or spring term.

No student admitted with advanced standing will be recommended for the degree of Bachelor of Laws until he has completed in this School at least one year of residence and passed successfully twenty-eight credit hours with the average required for the degree.

EXAMINATIONS

Written examinations are held at the end of each course. Every student is required to take the regular examinations unless excused. No excuse for absence will be granted except by the Dean and then only for illness or other emergency. Application for excuse must be made in writing not later than one month after the date of the examination. A grade of NG (no grade) will be entered on the record of a student thus

excused, and he may take the next regularly scheduled examination in the course for which the excuse has been granted.

No special examinations will be given; except that, upon written application to the Dean, showing sufficient cause, a candidate for a degree at a convocation before the next regular examination, if he would be entitled to take a postponed examination, may, at the discretion of the Faculty, be given a special examination.

If a student fails to take an examination, a grade of *F* (to be counted as zero) will be recorded, unless the student has obtained the Dean's permission to drop the course according to regulations stated on pages 41 and 42 or to be excused from the examination.

GRADES

Grades are indicated by the letters *A*, excellent, 85-100; *B*, good, 75-84; *C*, satisfactory, 65-74; *D*, poor, 55-64—below standard for graduation; *F*, failed—below 55; and *NG*, no grade—student excused from failure to take regularly scheduled examination. See "Examinations" above, for grade upon failure to take an examination. The grades *A*, *B*, *C*, and *D* mean that the work has been completed and credit given for the courses. *F*, failed, means that no credit will be given. To obtain credit the student must repeat the course; but a student who has obtained an average of *C* in the work of the term just completed and the preceding term and received a grade of *F* in only one course during those terms may take the next regular examination in that course, or a special examination at the end of the next term if he is a candidate for a degree at a convocation before the next regular examination. If on such reexamination he receives a passing grade he will be given credit in the course. Both grades are recorded.

EXCLUSION AND PROBATION FOR POOR SCHOLARSHIP

Candidates for the Degrees of Bachelor of Laws and Juris Doctor.—A student who in one term, or two successive terms, fails in courses aggregating eight or more credit hours will be excluded, except that if currently registered he will be permitted to complete the work of the term. Such a student is not eligible thereafter to be registered in the Law School or to attend classes. While excluded he may, however, with the consent of the Faculty, be admitted to the next regular examinations in those courses in which he has made a grade below passing, and if he receives a grade of passing in those courses with an average sufficient to make his cumulative average not less than *C*, he will be reinstated.

A student not subject to exclusion under the foregoing rule who at any time fails to maintain a cumulative average of at least *C*, will be placed on probation. A student on probation may at the discretion of

the Dean be required to reduce his program of study. If a student on probation does not, by the end of the second term following that in which his average has fallen below *C*, receive grades sufficient to give him a cumulative average of at least *C*, he will be excluded, except that if currently registered he will be permitted to complete the work of the term.

The cumulative average of a student includes all the grades in all the courses taken while he is in the Law School as a candidate for a particular degree. When a course is repeated or a reexamination is taken, both the first grade and the subsequent grade or grades are counted in the cumulative average.

In special cases in which a student who has been excluded can clearly demonstrate that he has the capacity to pursue the study of law with a definite likelihood of success, his low grades being due to special circumstances beyond his control, such student may be readmitted by the Faculty subject to such conditions as the Faculty may impose.

Candidates for Graduate Degrees.—A candidate for one of the graduate degrees whose work is not satisfactory in the opinion of the Faculty, taking into consideration the requirements and standards for the degree, may, by action of the Faculty, be excluded at the end of the term for which he is currently registered.

Unclassified Students.—An unclassified student whose work is not satisfactory in the opinion of the Faculty may, by action of the Faculty, be excluded at the end of the term for which he is currently registered.

CLASSIFICATION OF STUDENTS

Students are divided into classes on the completion of credit hours as follows: first year, one through twenty-eight; second year, twenty-nine through fifty-six; third year, fifty-seven or more.

THE DEGREES OF BACHELOR OF LAWS AND JURIS DOCTOR

The programs of study leading to the degrees of Bachelor of Laws and Juris Doctor are addressed to the development and application of legal principles, skills, and ideals which are indispensable to the equipment of a lawyer for professional responsibility and leadership in modern society. They include, first and foremost, the traditional core of legal education, namely, the study of legal materials—judicial, statutory, and administrative—and instruction in the technique of their use. These programs include the study of the nature and purpose of law, the history of the Anglo-American legal system, and the history and standards of the legal profession; practice in the skills of legal research and legal

writing; elementary training in trial practice; and, through the medium of seminars, experience in group handling of legal problems.

REQUIREMENTS FOR THE DEGREES

Bachelor of Laws

To be recommended for the degree of Bachelor of Laws (LL.B.) the student must have completed a residence period of not less than three academic years (four years for evening students) and eighty credit hours, with a cumulative average of at least *C*.

Juris Doctor

The degree of Juris Doctor (J.D.) is conferred as a recognition of the completion at the George Washington University Law School, with high rank, of the required program of study for the Bachelor's degree, including experience in research and legal authorship. To be recommended for this degree the student must have completed: (1) a residence period of not less than three academic years (four years for evening students) in the Law School; (2) eighty credit hours with a cumulative average of at least *B* including one of the following courses: Comparative Law, Jurisprudence, or one of the graduate seminars; and (3) one year of acceptable service on the board of student editors of *The George Washington Law Review*, election to which is subject to regulations laid down by the Faculty. Students taking the combined Arts and Law or Engineering and Law courses are not eligible for this degree.

HONORS

The degree of Bachelor of Laws or of Juris Doctor "with distinction" will be awarded students who obtain a cumulative average of *A*.

CURRICULUM

Required and Elective Courses.—A program of required and elective courses has been developed in order to assure coverage of the basic courses as well as to allow a degree of flexibility to meet the diverse interests of students. All first-year courses, three second-year courses, and one third-year course are required, leaving a total of thirty-six hours of electives. In general, second-year students are restricted to second-year electives but in appropriate cases the taking of third-year electives will be approved. Similarly, specially qualified third-year students may secure approval to take graduate courses.

Practice and Trial Practice Court.—Classroom instruction is conducted in pleading and procedure, trial and appellate practice, and evidence. This instruction includes grounding in the principles of the

Federal Rules of Civil Procedure and the Federal Rules of Criminal Procedure. In addition, each senior student is required to participate in the work of the Trial Practice Court, which includes the trying of cases as junior counsel and as senior counsel. A special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is available through the Case Club Competition.

Patent Law.—Students interested in patent law should take the following group of courses: Torts II—Unfair Trade Practices, Substantive Patent Law, Patent Office Practice, Patent Trial Practice Court, and Federal Anti-Trust Laws.

Curriculum.—Following is the curriculum for students beginning in the fall term. Adjustments are made to meet the needs of students beginning in the spring and summer terms.

Morning Division

FIRST YEAR

FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Legal Method and Legal System..	4	Real Property	4
Contracts	4	Contracts	2
Personal Property	2	Torts I	4
Criminal Law and Procedure....	4	Constitutional Law	4
Total.....	14	Total.....	14

SECOND YEAR

FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Civil Procedure	4	Evidence	4
Electives	10	Conveyances and Wills	4
Total.....	14	Electives	6
		Total.....	14

THIRD YEAR

FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Trial Practice Court	2	Trial Practice Court	2
Electives	10	Electives	10
Total.....	12	Total.....	12

Evening Division

FIRST YEAR

FALL TERM		Credit Hours	SPRING TERM		Credit Hours
Legal Method and Legal System..	4		Torts	4	
Contracts	4		Contracts	2	
Personal Property	2		Criminal Law and Procedure....	4	
Total.....	10		Total.....	10	

SECOND YEAR

FALL TERM		Credit Hours	SPRING TERM		Credit Hours
Real Property	4		Constitutional Law	4	
Civil Procedure	4		Evidence	4	
Electives	2		Electives	2	
Total.....	10		Total.....	10	

THIRD YEAR

FALL TERM		Credit Hours	SPRING TERM		Credit Hours
Electives	10		Conveyances and Wills	4	
Total.....	10		Electives	6	
			Total.....	10	

FOURTH YEAR

FALL TERM		Credit Hours	SPRING TERM		Credit Hours
Trial Practice Court.....	2		Trial Practice Court.....	2	
Electives	8		Electives	8	
Total.....	10		Total.....	10	

GRADUATE PROGRAM

DEGREES OF MASTER OF LAWS AND DOCTOR OF JURIDICAL SCIENCE

The administration of justice under law is a matter so vast and complex that some graduates feel the need for further study in order to broaden and deepen their understanding of the law. Others desire to extend their study into rapidly developing specialized fields. Graduate instruction, leading to the degree of Master of Laws, is therefore offered to enable qualified students to attain one or both of these objectives.

The degree of Doctor of Juridical Science is offered for selected students whose aim is to extend still further their studies by pursuing original research in law.

Graduate work is available to evening as well as morning students in order that lawyers in private practice and in government service may engage in advanced study or in original research.

PROGRAMS OF STUDY FOR FOREIGN LAWYERS

Two programs of study are provided to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. For such lawyers, whose aim is to acquire an understanding of our system so that they may work intelligently with its materials and practitioners after returning to their own countries, there is available the degree of Master of Comparative Law. For foreign lawyers, however, who wish to remain in this country to practice law, there is available the degree of Master of Comparative Law (American Practice) with an appropriate program of study. With respect to both programs, the students are not assigned to special classes but work in association with the other students in the regular courses, each student's program being adapted to his individual needs.

NON-DEGREE STUDY: CONTINUING LEGAL EDUCATION

As a result of changes and expansion in various fields of the law many lawyers pursue graduate study in order to keep abreast of current developments. Consequently, an important part of the graduate program is to provide continuing legal education for members of the bar not desirous of becoming degree candidates. The offerings in the field of governmental regulation provide opportunities for specialization. Although third-year and graduate courses are particularly suitable, first-year and second-year courses may be taken in appropriate cases. Members of the bar taking graduate work in this way register as unclassified students.

RESEARCH IN PUBLIC LAW

Research in public law is conducted under the supervision of members of the Faculty. The purpose of this research is to furnish means for training specialists in public law, either as government lawyers or as lawyers representing individuals or corporations in cases in which the Government is a party, and to assist in the analysis, clarification, formulation, and improvement of public law, substantive and procedural.

Candidates for the graduate degrees in the Law School and seniors who are eligible for the degree of Juris Doctor may pursue this work. Other students may be admitted with the special permission of the professor in charge.

REQUIREMENTS FOR THE DEGREES

Master of Laws

To be recommended for the degree of Master of Laws (LL.M.) the student must have completed a residence period of not less than two terms. Such residence should normally be continuous. All requirements for the degree must be completed in this Law School and in a period not exceeding two years after registration for work for the degree. The student must have completed with a minimum average of *B* twenty credit hours in courses listed in the law curriculum as graduate courses except that in appropriate cases third-year courses and Torts II—Unfair Trade Practices may be approved for inclusion in the program of study if not previously taken.

Master of Comparative Law

The degree of Master of Comparative Law (M.Comp.L.) is for foreign students who intend to return to their countries. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed satisfactorily twenty-four credit hours in approved courses in the curriculum of the Law School or of such other departments of the University as the Faculty of the Law School shall approve.

Master of Comparative Law (American Practice)

The degree of Master of Comparative Law, American Practice (M.Comp.L.(Am.Prac.)) is for foreign students who intend to remain in this country. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed twenty-eight credit hours in approved courses in the curriculum of the Law School with a cumulative average of at least *C*.

Doctor of Juridical Science

To be recommended for the degree of Doctor of Juridical Science (S.J.D.) the student must have completed a residence period of not less than one academic year. He must have pursued a course of study and research designated by his consultative committee and approved by the Committee on Graduate Studies. At the conclusion of his first year of residence, or at such other time as the Committee on Graduate Studies may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination shall be conducted by the consultative committee and such other members of

the Faculty and qualified experts from other research institutions as may be selected by the Committee on Graduate Studies.

Not later than the date specified in the University calendar the candidate must submit to the Dean one typewritten original and two legible and complete carbon copies of his dissertation in its final form. The dissertation must contain a summary of from 2,500 to 3,000 words inserted as an appendix. An additional original typewritten copy of this summary must be submitted for publication. To be acceptable the dissertation must, in the opinion of the examining committee, constitute a substantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Chairman of the Committee on Graduate Studies.

The summaries of accepted dissertations will be printed in a volume forming a number of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE SCHOOL OF ENGINEERING

THE FACULTY AND STAFF OF INSTRUCTION •

Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Dean of the School of Engineering*

Thomas Benjamin Brown, Ph.D., *Professor of Physics*

Norman Bruce Ames, M.S., E.E., LL.B., *Professor of Electrical Engineering*

James Henry Taylor, Ph.D., *Professor of Mathematics*

Frank Mark Weida, Ph.D., *Professor of Statistics*

Merle Irving Protzman, Ph.D., *Professor of Romance Languages*

Benjamin Carpenter Cruickshanks, B.S. in M.E., *Professor of Mechanical Engineering*

‡Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

§Carl Hugo Walther, B.E., M.C.E., *Professor of Civil Engineering*

Bruce Douglas Greenshields, C.E., Ph.D., *Professor of Civil Engineering*

Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Professor of Civil Engineering*

Forest Klaire Harris, Ph.D., *Professorial Lecturer in Electrical Engineering*

Clarence Edward Bardsley, C.E., Sc.D., *Professorial Lecturer in Mechanical Engineering*

Roy Colbert, B.S. in M.E., *Professorial Lecturer on Engineering Administration*

Waldo Edward Smith, B.E. in C.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*

Rudolph Michel, M.S. in M.E., *Professorial Lecturer in Mechanical Engineering*

Robert Gay Trumbull, B.S. in C.E., *Associate Professor of Mechanical Engineering*

Wolfram Karl Legner, Ph.D., *Associate Professor of German*

Raymond Pugh Eyman, C.E., *Associate Professor of Civil Engineering*

Averett Howard, A.M., *Associate Professor of English Composition*

•The President of the University, the Dean of Faculties of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Associate Professors, and Assistant Professors constitute the Faculty.

† On leave of absence 1953-54.

‡ On leave of absence fall term 1953-54.

- Charles Edward Greeley, B.S. in M.E., *Associate Professor of Mechanical Engineering*
- Haaren Albert Miklofsky, B.C.E., M.Eng., D.Eng., *Associate Professor of Civil Engineering*
- John Kaye, M.S. in M.E., *Associate Professor of Mechanical Engineering*
- Ralph Fuhrman, B.S. in C.E., M.S. in Eng., *Lecturer in Civil Engineering*
- Thomas Alvin O'Halloran, B.S. in E.E., *Lecturer in Electrical Engineering*
- Dwight Edward Shytte, *Lecturer in Electrical Engineering*
- Bernard Bernstein, B.S., B.M.E., *Lecturer in Mechanical Engineering*
- Alvin Raymond Schwab, B.S. in E.E., M.S. in Eng., *Lecturer in Civil Engineering*
- Malcolm Richardson Moore, B.E.E., *Lecturer in Electrical Engineering*
- Richard Lee Fenton, B.M.E., *Lecturer in Mechanical Engineering*
- Ralph Brady, B.S. in E.E., *Lecturer in Electrical Engineering*
- Jerome Addison Lee, B.S., *Lecturer in Electrical Engineering*
- Benjamin Franklin Slingluff, B.S. in E.E., *Lecturer in Electrical Engineering*
- Harold Valdemar Oerting, B.S. in E.E., *Lecturer in Electrical Engineering*
- Elmer Wallace Teagarden, B.S. in E.E., *Lecturer in Civil Engineering*
- George Pida, B.E.E., *Lecturer in Electrical Engineering*
- Claudius Edmund Bennett, E.E., *Lecturer in Electrical Engineering*
- Kermit Milton Lovewell, B.S. in E.E., *Lecturer in Electrical Engineering*
- William Herbert Gossard, A.B., M.S. in E.E., *Lecturer in Electrical Engineering*
- George Abraham, M.S., *Lecturer in Electrical Engineering*
- David William Baker, M.S., *Lecturer in Mechanical Engineering*
- William Balwanz, B.E.E., M.S. in E.E., *Lecturer in Electrical Engineering*
- Francis Lewis Hermach, B.E.E., *Lecturer in Electrical Engineering*
- James Edward Robins, B.C.E., M.Eng., *Lecturer in Civil Engineering*
- Eli Baer Roth, B.S., M.S. in M.E., *Lecturer in Mechanical Engineering*
- William John Ruby, M.S. in Eng., *Lecturer in Civil Engineering*
- Garrett Carper Tewinkel, B.S. in M.E., M.C.E., *Lecturer in Civil Engineering*
- John Clifford Goff, B.M.E., *Associate in Mechanical Engineering*
- Edward French Davis, M.S., *Associate in Mechanical Engineering*
- Vincent Harry Hennessy, B.C.E., *Associate in Civil Engineering*
- Arnold Mayo Kronstadt, B.M.E., *Associate in Mechanical Engineering*

COMMITTEES •

THE DEAN'S COUNCIL ‡

1954

Norman Bruce Ames
Bruce Douglas Greenshields

1955

James Henry Taylor
Charles Rudolph Naeser

1956

Carl Hugo Walther
Charles Edward Greeley

COMMITTEE ON ADMISSIONS AND ADVANCED STANDING

Norman Bruce Ames, *Chairman*

Benjamin Carpenter Cruickshanks Haaren Albert Miklofsky

COMMITTEE ON SCHOLARSHIP

The Dean of the School, *Chairman*

Thomas Benjamin Brown	James Henry Taylor
Benjamin Carpenter Cruickshanks	Carl Hugo Walther
Haaren Albert Miklofsky	John Kaye

GRADUATE ADVISORY COMMITTEE

Martin Alexander Mason, *Chairman*

Thomas Benjamin Brown	Norman Bruce Ames
James Henry Taylor	Carl Hugo Walther
Forest Klaire Harris	Rudolph Michel
Haaren Albert Miklofsky	John Kaye

GENERAL INFORMATION

INTRODUCTORY

The School of Engineering was organized in 1884 as the Corcoran Scientific School. In 1903 that school was combined with Columbian College in the Department of Arts and Sciences. In 1905 the engineering courses were placed under an administrative organization known as the Washington College of Engineering and in 1909 the name was changed to the College of Engineering and Mechanic Arts. In 1914 the name became the School of Engineering.

Courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering

• The President of the University and the Dean of the School of Engineering are members ex officio of all committees.

‡ Elected by the Faculty.

are accredited by the Engineers' Council for Professional Development, the recognized accrediting body of the engineering profession.

ADVISORY SYSTEM

Every student entering the School of Engineering as a degree candidate is assigned a permanent Faculty adviser—for the purpose of guiding the educational career of the student, providing assistance in his professional development as an engineer, establishing close relations between the Faculty and the student, and furnishing counsel and advice in all phases of the academic career of the student.

Faculty advisers counsel students on their programs of study, the achievement and maintenance of satisfactory scholastic performance, professional development, extra-curricular activity as part of the educational process; and assist the entering student in orientation in the engineering discipline. The adviser represents the student in all cases requiring Faculty action.

A student who has not completed the course work specified for the freshman and sophomore years is required to consult his adviser when so directed by the Dean, and to follow the recommendations of his adviser in all academic matters. Students having junior or senior status are encouraged to consult their advisers. However, advisers may not deny a student entry into any course or activity to which he is entitled under the regulations of the School of Engineering. The Dean acts as temporary adviser to entering or transfer students pending assignment of their permanent advisers. Students are required to obtain their advisers' approval of programs of study at the time of registration.

Students are encouraged to consult their advisers or instructors about college problems at any time; and parents or guardians are invited to consult with the Dean and advisers, in respect to any student problems.

Faculty advisers discharge their counseling duties in accordance with the high principles of their professional responsibility; however, the final responsibility for a student's action lies wholly with the student.

REGULATIONS

Students in the School of Engineering are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26, and the University regulations stated on pages 41-47.

AMOUNT OF WORK

Eighteen credit hours, including required physical education, constitute normal full-time work. Nine credit hours constitute normal part-time work.

A full-time student who is not on probation may take ordinarily not

more than nineteen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take ordinarily not more than ten credit hours. A student whose quality-point index is 3.00 or higher may be permitted by the Dean to exceed these limits by not more than two credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ATTENDANCE

The student is expected to attend every meeting of the course in which he is registered, fully prepared to carry on the work required. The student is held responsible for all work in the course, and all absences must be excused before provision will be made for him to make up the work missed. Excuses for absences from examinations which have been announced in advance can be obtained only by making written application to the instructor in charge of the course.

CHANGES IN PROGRAM OF STUDIES

Courses may be added to a student's program, with the approval of the instructor, the adviser, and the Dean, during the seven days following the first day of the course.

Courses may be dropped from a student's program, with the approval of the adviser and the Dean, during the first thirty-five days of the course. Withdrawal from a course without the required adviser's approvals entails the academic penalty of failure in the course. Withdrawal from a course after thirty-five days may be approved by the Dean upon presentation of written evidence of extenuating circumstances.

Unauthorized withdrawal from a course at any time entails the academic penalty of failure in the course and financial responsibility for the full fee for the course.

THE BACHELOR'S DEGREES

The Bachelor's degrees are: Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering.

The degree of Bachelor of Science in Engineering may be earned with any of the following options: Business Administration, Chemistry, Economics, Mathematics, Physics, or Statistics.

REQUIREMENTS FOR THE DEGREES

SCHOLARSHIP

The system of grading and computing scholarship is described in detail on pages 41 and 42.

In order to graduate, a student must have a quality-point index of at least 2.00 on all work taken at The George Washington University, and, in addition, a quality-point index of at least 2.00 on all work accepted for the degree in the School of Engineering.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Dean's Council.

Suspension.—A student who has a quality-point index below 1.00 will be suspended. A student who becomes subject to probation for the third time, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. He must then submit evidence to the Dean's Council that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship regulations are applied when a student has completed a minimum of twelve credit hours of work. Thereafter, the regulations are applied in multiples of twelve credit hours.

USE OF CORRECT ENGLISH

Any student whose use of English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean's Council. The Council may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean's Council.

The foregoing regulation is to be interpreted as applying to both written and spoken English.

RESIDENCE

One year, or thirty-six credit hours, must be completed in residence in the School of Engineering. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue

work elsewhere, the work of the senior or final year must be completed in residence.

CURRICULUM REQUIREMENTS

The satisfactory completion of one of the following curricula of 140 credit hours, exclusive of physical education, is required.

Physical Education is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", page 44.)

Variations from the prescribed curricula may be made, with the permission of the Dean's Council. A student desiring to omit a required course and substitute another must make written application to the Dean, presenting satisfactory reasons for the substitution; and written approval must be obtained before registration for the course.

FRESHMAN YEAR (FOR ALL ENGINEERING CURRICULA)		Credit Hours
Chem. 11-12	General Chemistry	8
CE 2	Plane Surveying	2
Engl. 1, 2	English Composition	6
Math. 12	Plane Analytic Geometry	3
Math. 19	Differential Calculus	3
ME 1	Engineering Survey and Orientation	1
ME 3	Mechanical Drawing	2
ME 4	Descriptive Geometry	2
Phys. Ed.	See page 44 for statement of requirement.	
•Phys. 6 and 7	General Physics	6
Total		33

ROTC.—Air Force ROTC students substitute Air Science 1-2 (4) for Mechanical Engineering 1 (1) and Physical Education 1-2 (2).

SOPHOMORE YEAR (FOR ALL ENGINEERING CURRICULA)		Credit Hours
Phys. 8	General Physics	3
Phys. 55	Physical Measurements	3
Math. 20	Integral Calculus	3
Elective	(EE students take Math. 132)	3
EE 9-10	Elements of Electrical Engineering	6
CE 21	Analytical Mechanics: Statics	2
CE 22	Analytical Mechanics: Dynamics	3
Speech 1	Effective Speaking	3
Engl. 11	The Writing of Reports	3
ME 13-14	Mechanism	4
CE 25-26	Engineering Materials	4
Phys. Ed.	See page 44 for statement of requirement.	
Total		37

ROTC.—Air Force ROTC students substitute Air Science 51-52 (4) for Physical Education 11-12 (2) and Speech 1 (3).

* The student who begins Physics with Physics 6 or 7, is subject to a qualifying examination. Credit will be given for Physics 5 if not used for entrance requirements.

Bachelor of Civil Engineering

JUNIOR YEAR

Credit
Hours

CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Econ. 1-2	Principles of Economics	6
CE 141	Graphic Statics	3
CE 142	Bridge Stresses	3
Elective	.....	6

Total..... 35

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (6).

SENIOR YEAR

Credit
Hours

CE 23	Higher Surveying	4
CE 164	Highway Engineering	3
CE 147-48	Structural Design	4
CE 149-50	Concrete and Masonry Construction	6
CE 151-52	Statically Indeterminate Structures	4
CE 181-82	Water Supply and Sewerage	6
CE 187-88	Engineering Contracts and Specifications	4
CE 189-90	Civil Engineering Proseminar	2
CE 192	Soil Mechanics	3

Total..... 36

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Civil Engineering 187-88 (4) and Civil Engineering 189-90 (2).

Bachelor of Electrical Engineering

JUNIOR YEAR

Credit
Hours

CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Econ. 1-2	Principles of Economics	6
EE 105-6	Direct-Current Laboratory	4
EE 107	Alternating-Current Circuits	3
EE 108	Alternating-Current Machinery	3
Elective	.....	3

Total..... 36

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Economics 2 (3) and Elective (3).

SENIOR YEAR

1. Communications Option

	Credit Hours
EE 115-16	Advanced Network Theory 6
EE 123-24	Advanced Network Laboratory 4
Phys. 133	Electronic Circuits 3
EE 148	Applications of Electronic Devices 3
EE 111-12	Electrical Measurements 4
EE 109	Alternating-Current Machinery 3
EE 150	Electronic Devices Laboratory 2
EE 133-34	Alternating-Current Laboratory 4
EE 189-90	Electrical Engineering Proseminar 2
Elective	. . . . . 4

Total 35

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Electrical Engineering 189-90 (2) and Elective (4).

2. Power Option

	Credit Hours
EE 109	Alternating-Current Machinery 3
EE 140	Electrical Design 3
EE 139	Illumination Engineering 2
EE 138	Industrial Electrical Power Applications 2
EE 129	Symmetrical Components 3
EE 130	Principles of Electric Power Transmission 3
EE 111-12	Electrical Measurements 4
EE 133-34	Alternating-Current Laboratory 4
EE 189-90	Electrical Engineering Proseminar 2
Phys. 133	Electronic Circuits 3
Elective	. . . . . 6

Total 35

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Elective (6).

Bachelor of Mechanical Engineering

JUNIOR YEAR

	Credit Hours
CE 123	Strength of Materials 3
CE 130	Hydraulics 3
CE 140	Materials and Hydraulics Laboratory 2
ME 111-12	Thermodynamics 6
Phys. 132	Electronics 3
Econ 1-2	Principles of Economics 6
ME 141-42	Management Problems 4
ME 7	Machine Drawing 2
ME 8	Mechanism Drawing 2
Elective	. . . . . 6

Total 37

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (6).

SENIOR YEAR		Credit Hours
ME 129-30	Power Plants	6
ME 127-28	Machine Design	4
ME 139	Fluid Dynamics	3
ME 140	Dynamics of Machinery	3
ME 131-32	Heating, Ventilating, Air Conditioning, and Refrigeration	4
ME 126	Methods of Manufacture	2
ME 133	Combustion Engines	2
ME 115-16	Mechanical Laboratory	4
ME 189-90	Mechanical Engineering Proseminar	2
Elective	.....	4
Total.....		34

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Mechanical Engineering 189-90 (2) and Elective (4).

Bachelor of Science in Engineering

JUNIOR YEAR		Credit Hours
CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Econ. 1-2	Principles of Economics	6
ME 141-42	Management Problems	4
CE 187-88	Engineering Contracts and Specifications	4
Elective	.....	6
Total.....		37

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (6).

SENIOR YEAR		Credit Hours
Option	As approved by the department concerned...	34
Total.....		34

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for option courses (6) as approved by the department concerned.

The Bachelor of Science in Engineering curriculum provides training in the basic physical principles employed in engineering and in engineering methods of analysis, and in addition, offers an opportunity for study in optional fields in which the student has special interest.

Optional study can be selected from the fields of Business Administration, Chemistry, Economics, Mathematics, Physics, or Statistics. The program of study in the option is formulated by the department concerned in conference with the student. The program, bearing the approval of the department concerned, must be submitted by the student to the Dean's Council for approval before the beginning of the senior

year. During the period of optional study the student must comply with such regulations as the department concerned may prescribe.

The following curricula are recommended, for the guidance of students, by the several departments in which optional study is available. Variations from these curricula to satisfy the exceptional needs of individual students may be made by the department concerned.

BACHELOR OF SCIENCE IN ENGINEERING OPTIONAL CURRICULA

	Credit Hours
Business Administration Option	
Acct. 1-2	Introductory Accounting
Bus. Adm. 101	Business Organization and Combination
Bus. Adm. 131	Business Finance
Pol. Sc. 127	Commercial Law: Contracts, Agency, and Bailments
Elective	Fifteen credit hours to be selected from the following:
	Acct. 101: Cost Accounting
	Acct. 111: Financial Statement Analysis
	Acct. 155: Business Budgeting
	Bus. Adm. 105: Personnel Management in Industry
	Bus. Adm. 106: Problems in Personnel Management
	Bus. Adm. 109: Office Management
	Bus. Adm. 121: General Insurance
	Bus. Adm. 141: Principles of Marketing
	Bus. Adm. 145: Sales Management
	Bus. Adm. 150: Principles of Purchasing
	Econ. 121: Money and Banking
	Econ. 175: Railroad Transportation
	Econ. 176: Motor, Air, and Water Transportation
	Stat. 111: Business and Economic Statistics
Chemistry Option	
Chem. 21	Qualitative Inorganic Analysis
Chem. 22	Quantitative Inorganic Analysis I
Chem. 111-12	Physical Chemistry Lectures
Chem. 113-14	Physical Chemistry Laboratory
Chem. 122	Quantitative Inorganic Analysis II
Chem. 135	Inorganic Chemistry: Preparations
or 155	Organic Chemistry: Preparations
Chem. 151-52	Organic Chemistry
Elective	Two years of German recommended
Economics Option	
Econ. 121	Money and Banking
Econ. 122	The Supply and Control of Money
Econ. 141-42	Labor Economics
Stat. 111	Business and Economic Statistics I
Stat. 112	Business and Economic Statistics II
Elective	Nine credit hours in Statistics or Business Administration selected with the approval of the Department of Economics.
Mathematics Option	

Fifteen credit hours of mathematics beyond calculus, in second- and third-group

COURSES.

Physics Option	
Math. 132	Differential Equations 3
Phys. 106	Optics 3
Phys. 113-14	Atomic and Statistical Physics 6
Phys. 132	Electronics 3
Phys. 155	Advanced Physical Measurements 3
Statistics Option	
Stat. 91-92	Principles of Statistical Methods 6
Stat. 117	Analysis of Variance 3
Stat. 118	Correlation and the Chi-Square Test 3
Stat. 155-56	Mathematical Probability 6
Stat. 157-58	Mathematical Statistics 6

THE DEGREE OF MASTER OF SCIENCE IN ENGINEERING

Upon the satisfactory completion of the graduate requirements of the School of Engineering the degree of Master of Science in Engineering is conferred. The discipline of this degree is designed to lead to a mastery of scientific principles and methods as they are applied in engineering. It is conceived that this objective can be served best by providing a relationship in which the intellectual needs and desires of the student are an important element in determining the curriculum. To this end the responsibility for the student's program of study is established in a Graduate Advisory Committee composed of members of the University Faculty and specialists selected from the engineering profession. Programs of study are prescribed for each candidate by the Graduate Advisory Committee, or an assigned adviser, in accordance with his state of knowledge and needs, and as required to achieve the objective of mastery of principles and methods.

ADMISSION TO CANDIDACY

Applications for admission to candidacy for the degree must be made to the Graduate Advisory Committee.

Applicants are required to satisfy the Committee of their capacity for productive study in the discipline and must have acceptable personal qualities. Applicants holding Bachelor's degrees in engineering from a recognized institution, and whose record, in the opinion of the Graduate Advisory Committee, gives evidence of adequate preparation for graduate study may be admitted to candidacy for the graduate degree. Applicants who do not hold a satisfactory Bachelor's degree in engineering, or whose adequacy of preparation is questioned may be admitted to candidacy upon successful completion of a qualifying examination prescribed by the Committee.

ADVANCED STANDING

Study of a graduate character completed prior to admission to candidacy for the graduate degree in the School of Engineering will be considered by the Graduate Advisory Committee in prescribing the candidate's program of study provided it contributes substantially to the achievement of mastery of principles and methods. In any case a minimum of one year full-time study must be completed under the Graduate Advisory Committee.

REQUIREMENTS FOR THE DEGREE

A minimum of one year full-time study as approved by the Graduate Advisory Committee must be completed successfully. Candidates with limited areas of unsatisfactory preparation may be required to complete any necessary remedial or preparatory study in addition.

Study applied to satisfy requirements for another degree may not be applied to satisfy requirements for the graduate degree in engineering.

Candidates for the degree must demonstrate substantial mastery of scientific principles and methods of their use in the candidate's area of interest by successful completion of the prescribed program of study and a comprehensive examination.

The candidate's scholarship must be satisfactory to the Graduate Advisory Committee and will commonly be required to be equivalent to grade *B*. A student whose scholarship is considered to be unsatisfactory will be suspended by the Dean upon the recommendation of the Committee, or his assigned adviser.

With the approval of the Graduate Advisory Committee the candidate may be permitted to include a thesis in his program of study. The candidate will be subject to an oral examination of his thesis.

In addition to the course examinations, the candidate must complete successfully a comprehensive examination on his area of study. The examination may be written or oral, or both, at the discretion of the Graduate Advisory Committee.

The candidate must complete successfully the program of study prescribed within three years if a full-time student, and within five years if a part-time student.

THE PROFESSIONAL DEGREES

The professional degree of Civil Engineer, Electrical Engineer, or Mechanical Engineer may be conferred upon a graduate of the School of Engineering who has demonstrated his professional ability.

REQUIREMENTS FOR THE DEGREE

1. Application may not be made sooner than three years after graduation, and then only if the candidate has had definite responsibility for engineering work of substantial importance.

2. A detailed statement of the candidate's experience, references, the degree sought, and the title of the dissertation must be filed with the Dean eight months before the Commencement at which the degree is to be conferred.

Detailed information concerning the preparation of the dissertation may be obtained from the Office of the Dean.

3. The dissertation will be read for acceptance by an examining committee appointed by the Dean to include members of the Faculty of the School of Engineering and at least one expert from engineering practice. The committee will report its recommendation to the Faculty of the School of Engineering.

THE SCHOOL OF PHARMACY

THE FACULTY AND STAFF OF INSTRUCTION*

Charles Watson Bliven, M.S., *Dean of the School of Pharmacy*

Ralph Dale Kennedy, Ph.D., *Professor of Accounting*

Ira Bowers Hansen, Ph.D., *Professor of Zoology*

Lawson Edwin Yocum, Ph.D., *Professor of Botany*

Charles Watson Bliven, M.S., *Professor of Pharmacy*

Alan Thomas Deibert, A.M., *Professor of Romance Languages*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

Calvin Darlington Linton, Ph.D., *Professor of English Literature*

Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*

Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*

George Martin Koehl, A.M., *Professor of Physics*

Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry*

Salvatore Joseph Greco, Ph.D., *Associate Professor of Pharmacy*

John Watson Schermerhorn, Ph.D., *Associate Professor of Pharmaceutical Chemistry*

Robert Meyer Leonard, B.S. in Phar., *Assistant Professor of Pharmacology and Pharmacognosy*

Harold Jerome Bobys, A.B., C.P.A., *Lecturer on Pharmacy Accounting*

Carson Gray Frailey, A.B., LL.B., *Lecturer on Pharmaceutical Law*

Charles Byrd Hawthorne, B.S. in Phar., *Lecturer on Pharmacy Management*

Franklin Dero Cooper, M.S., *Instructor in Hospital Pharmacy*

SEMINAR LECTURERS

William Paul Briggs, M.S., Sc.D., *Professorial Lecturer on Pharmacy Training*

Frederick John Cullen, Phar.G., M.D., *Professorial Lecturer on Drug Manufacture*

John Christian Krantz, Jr., Ph.D., *Professorial Lecturer on Pharmaceutical Research*

Justin Lawrence Powers, Ph.D., *Professorial Lecturer on Official Drug Standards*

George Potter Larrick, *Professorial Lecturer on Drug Control*

Robert Philip Fischelis, B.S., Phar.D., Sc.D., *Professorial Lecturer on Pharmaceutical Organizations*

* The President of the University, the Dean of Faculties of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

Daniel Lamont Seckinger, M.D., Dr.P.H., *Professorial Lecturer on Hygiene and Sanitation*

COMMITTEES •

ADVISORY COMMITTEE

Irving Alexander Tennyson, *Chairman*

Howard Bradbury

William Paul Briggs

Fred Royce Franzoni

THE DEAN'S COUNCIL ‡

Ira Bowers Hansen

George Martin Koehl

John Watson Schermerhorn

COMMITTEE ON SCHOLARSHIP

Lawson Edwin Yocum, *Chairman*

Robert Meyer Leonard

Robert Corbin Vincent

GENERAL INFORMATION

INTRODUCTORY

In 1867 the foundation for the National College of Pharmacy was laid by the Apothecaries' Association of the District of Columbia. The College was opened in 1872 and continued until 1906, when it became affiliated with The George Washington University.

The School of Pharmacy is accredited by the American Council on Pharmaceutical Education as a class "A" school. It is a member of the American Association of Colleges of Pharmacy.

Washington offers many opportunities for the student of pharmacy. The American Institute of Pharmacy, the headquarters of the American Pharmaceutical Association, is only a few blocks from the School of Pharmacy. The Institute also houses a pharmaceutical museum, a library, and research laboratories. Government agencies and laboratories whose activities are closely allied to pharmacy, and the government libraries, the facilities of which are open to the student, are readily accessible.

The Institute and the Federal Government bring to Washington leaders in the fields of pharmacy, many of whom present to senior students in the School of Pharmacy current professional information.

* The President of the University and the Dean of the School of Pharmacy are members ex officio of all committees.
‡ Elected by the Faculty.

REGULATIONS

Students in the School of Pharmacy are subject to and are expected to familiarize themselves with the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES as stated on pages 12-26, and the University regulations stated on pages 41-47.

Students registered in the Junior College Pharmacy curriculum are subject to the regulations of the Junior College. However, in the professional courses of that curriculum, the attendance requirements of the School of Pharmacy prevail.

AMOUNT OF WORK

Normal work for any year is that outlined under the head of "Curriculum Requirements", below. A student who wishes to take more than the normal amount of work may do so only with the permission of the Committee on Scholarship, the members of which are guided in their decision by the scholastic record and the extent to which he is employed. A student on probation is limited in the number of credit hours he may carry.

The student is not encouraged to undertake outside employment while attempting a full course of study. A student who maintains a quality-point index of 2.00 or higher for all courses and a quality-point index of 2.50 or higher for pharmacy courses may be granted permission by the Dean to undertake outside employment. The amount of the employment permitted is governed by the scholarship record of the student and the number of credit hours for which he is registered.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean.

ATTENDANCE

Except by special permission of the instructor, credit will not be given for any pharmacy course if absences, including both lecture and laboratory, exceed in number for each term the hours of credit for the term. If a course has distinct divisions such as lectures, laboratories, or recitations, the absences apply pro rata to such divisions.

EXAMINATIONS BEFORE STATE BOARDS OF PHARMACY

To be eligible for examination before state boards of pharmacy, the applicant is required to present satisfactory evidence of graduation from a college of pharmacy. In addition, most states require that the applicant have one year of practical experience in a pharmacy. This experience may not be gained concurrently with the school year.

THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

Upon the satisfactory completion of the requirements of the School of Pharmacy, the degree of Bachelor of Science in Pharmacy is conferred.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 41 and 42.

In order to graduate, a student must have a general quality-point index of at least 2.00. In addition, he must have a quality-point index of at least 2.50 in all pharmacy courses.

Probation.—A student must maintain a general quality-point index of at least 2.00, or be placed on probation.

A student remains on probation as long as his general quality-point index is below 2.00; however, a student who has an index of between 1.50 and 2.00 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

Suspension.—A student who has a general quality-point index below 1.50 will be suspended; however, a student who has an index between 1.40 and 1.50 will be considered by the Committee on Scholarship, which may retain him on probation or suspend him.

A student who is subject to probation for the third time, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Dean of the School of Pharmacy, that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship rules are applied when a student has undertaken a multiple of nine credit hours.

CURRICULUM

The Junior College Pharmacy curriculum (see page 61) comprises the first two years of the four-year pharmacy course. The curriculum is established by the faculties of the School of Pharmacy and the Junior College in accordance with the professional needs, and complies, in so far as possible, with the latter group regarding the general cultural studies.

The laboratory method of teaching is used. Recitation classes are held in connection with each course in order to provide systematic drill in the subjects.

The curriculum requirements include at least 137 credit hours. At least two credit hours of the elective courses must consist of laboratory work. The following curriculum leads to the degree of Bachelor of Science in Pharmacy.

Freshman and Sophomore Years

Courses	Did. hrs.	Lab. hrs.	Credit hrs.	Clock hrs.
Courses in the Junior College (see page 61).....	864	704	69	1568

Junior Year: Fall Term

Courses	Did. hrs.	Lab. hrs.	Credit hrs.	Clock hrs.
Chemistry 151.....	48	48	4	96
Pharmacy 101.....	32	48	3	80
Pharmacy 105.....	32	....	2	32
Pharmacy 107.....	48	....	3	48
Physiology 115.....	48	....	3	48
Physiology 117.....	....	48	1	48
Total.....	208	144	16	352

Junior Year: Spring Term

Bacteriology 112.....	48	96	4	144
Chemistry 152.....	32	96	4	128
Pharmacy 102.....	32	96	4	128
Pharmacy 106.....	32	....	2	32
Pharmacy 110.....	48	....	3	48
Total.....	192	288	17	480

Senior Year: Fall Term

•Biochemistry 221.....	32	96	4	128
Pharmacy 103.....	32	96	4	128
Pharmacy 111.....	32	48	3	80
Pharmacy 165.....	48	....	3	48
Elective	16	96	3	112
Total.....	160	336	17	496

Senior Year: Spring Term

Bacteriology 210.....	32	....	2	32
•Biochemistry 222.....	32	96	4	128
Pharmacy 166.....	32	64	3	96
Pharmacy 176.....	32	....	2	32
Pharmacy 178.....	64	....	4	64
Pharmacy 188.....	32	....	....	32
Pharmacy 190.....	16	....	1	16
Pharmacy 192.....	....	48	1	48
Elective	16	....	1	16
Total.....	256	208	18	464
Grand total.....	1680	1680	117	3360

THE DEGREE OF MASTER OF SCIENCE IN PHARMACY

Upon the satisfactory completion of the graduate requirements of the School of Pharmacy, the degree of Master of Science in Pharmacy is conferred.

DEFINITION OF THE MASTER'S WORK

The study leading to the degree of Master of Science in Pharmacy is a comprehensive survey of one or more of the fields of knowledge embraced by Pharmacy. It is a continuation of the work of the student's undergraduate major and involves a greater acquaintance with scholarly method.

• Students planning to do graduate work may substitute other courses for Biochemistry 221-22 if these courses will be included in the graduate curriculum.

The student must satisfy certain minimum requirements as to previous preparation, residence, ability to read an approved modern foreign (European) language, and courses taken; but these requirements, while essential, are regarded primarily as qualifying measures. The student's knowledge of his field, as demonstrated by his thesis and by the results of his Master's examination (together with such other examinations involving special skills or techniques as may be required), is the basis upon which the Master's degree is conferred. The foreign language requirement may be waived by faculty action in the instance of students whose field of study at the Master's level may not require such preparation.

REQUIREMENTS FOR THE DEGREE

RESIDENCE

An academic year of residence is required, i.e., completion of a minimum of thirty credit hours of work including the thesis, which is counted as the equivalent of six credit hours of course work. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than twenty-seven weeks. Not more than twelve credit hours (which must be approved in advance by the Dean of the School of Pharmacy) may be taken in another school or division of this University, and such work may not be counted toward both a degree in that school or division and the Master's degree in the School of Pharmacy.

AMOUNT OF WORK

A student whose previous preparation in his chosen field has been adequate may complete his requirements, including the thesis, by a minimum of thirty credit hours; others are required to do additional work. First-group courses may not be credited toward the Master's degree. Pharmacy courses numbered below 200 may be credited toward the Master's degree only when registration for graduate credit has been approved at the beginning of the course by the instructor and the Dean of the School of Pharmacy.

ADMISSION TO CANDIDACY

In addition to admission requirements stated on page 18, the applicant for admission to candidacy for the Master's degree must be approved by the appropriate representative of the department of Pharmacy and by the Dean.

SCHOLARSHIP

A student whose scholarship is considered unsatisfactory may be suspended by the Dean upon recommendation of the staff member under whom the student is working.

THE MASTER'S THESIS

The thesis may be of a research, expository, critical, or creative type. The main purpose of a Master's thesis is to demonstrate the student's ability to make independent use of the information and training acquired through his other disciplines, and to furnish objective evidence of his constructive powers in his chosen field. Registration for the thesis must be no later than the beginning of the final year of preparation, unless the professor in charge of the thesis permits registration at the beginning of the final term. The choice of the thesis subject must be approved by the professor in charge of the student's field and recorded in the Office of the Registrar by the date announced in the University calendar. Registration for the thesis is ordinarily made on the basis of three credit hours for two successive terms. In exceptional cases, and with the approval of the professor in charge of the thesis, the student may register for the entire six credit hours during a single term. The type-written thesis in its final form must have the approval of the professor in charge of the student's field and must be presented to the Dean by the student not later than the date announced in the University calendar. Requirements regarding the form of the thesis are stated on page 45, and additional information will be supplied by the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period the student must register for it again, and pay tuition on the same basis as for a repeated course.

FINAL EXAMINATION

In addition to the course examinations, the candidate must pass a final examination on the thesis and its related fields. This examination may be either written or oral at the discretion of the faculty.

If the thesis is submitted more than three years after the course requirements have been completed, a written examination covering the student's complete program of study will also be required.

THE SCHOOL OF EDUCATION

THE FACULTY AND STAFF OF INSTRUCTION*

James Harold Fox, A.M., Ed.D., *Dean of the School of Education*

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women*

Frank Mark Weida, Ph.D., *Professor of Statistics*

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*

James Harold Fox, A.M., Ed.D., *Professor of Education*

Thelma Hunt, Ph.D., M.D., *Professor of Psychology*

Frances Kirkpatrick, A.M., *Professor of Home Economics*

William Henry Myers, A.M., *Professor of Physical Education for Men*

Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*

Chester Elwood Leese, Ph.D., *Professor of Physiology*

Helen Bennett Lawrence, A.M., *Professor of Physical Education for Women*

Blake Smith Root, A.M., Ed.D., *Professor of Education*

Ralph Windsor Ruffner, A.M., Ed.D., *Professor of Education*

Meredith Chester Wilson, B.S., *Adjunct Professor of Education*

Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*

Charles Edward Bish, A.M., Ed.D., *Professorial Lecturer in Education*

John Frederick Brougher, A.M., Ed.D., *Professorial Lecturer in Education*

Milo Frederick Christiansen, B.S., M.R., *Professorial Lecturer in Physical Education*

‡Cecil Wentworth Morgan, Ph.D., *Professorial Lecturer in Physical Education*

George Frederick Anderson, M.S., Ed.D., *Professorial Lecturer in Physical Education*

Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*

Joseph Henry Krupa, M.S., Ed.D., *Associate Professor of Physical Education for Men*

Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*

Don Carlos Faith, Ph.D., *Associate Professor of Psychology*

Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*

* The President of the University, the Dean of Faculties of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

‡ On national service leave.

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Men*

Mildred Hollander Shott, A.M., *Assistant Professor of Secretarial Studies*

Madaline Kinter Remmlein, Ph.D., J.D., *Lecturer in Education*

LuVerne Crabtree Walker, A.M., *Lecturer in Education*

*Helen Barton Goodwin, A.M., *Lecturer in Education*

Florence Mary Lumsden, A.M., Ed.D., *Lecturer in Education*

William Samuel Rumbough, A.M., Ed.D., *Lecturer in Education*

Howard Odin Johnson, A.M., Ed.D., *Lecturer in Education*

Arne William Randall, A.M., *Lecturer in Education*

Raymond Ray Reed, A.M., *Lecturer in Education*

Joseph Bueol Johnson, A.M., Ed.D., *Lecturer in Education*

Mary Ellen Coleman, A.M., *Lecturer in Education*

Mary Louise Collings, A.M., *Lecturer in Education*

Grover LaMarr Angel, A.M., Ed.D., *Lecturer in Education*

Harold Maurice Wilson, A.M., Ed.D., *Lecturer in Education*

CONSULTANTS IN RESEARCH

Wesley Earl Armstrong, M.S., Ed.D., *Chief for Teacher Education, U. S. Office of Education*

John Robert Ludington, Ph.D., *Specialist in Industrial Arts, U. S. Office of Education*

Francis James Brown, Ph.D., *Staff Associate, American Council on Education*

FIELD SERVICE COORDINATORS

William Wallace Rich, A.M., *Supervisor of Secondary Schools, Arlington County, Virginia*

Helen King Finlay, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1954

Raymond George Hanken

Ralph Windsor Ruffner

1955

Frances Kirkpatrick

Elizabeth Burtner

1956

Frank Mark Weida

Burnice Herman Jarman

* On leave of absence 1953-54.

‡ The President of the University and the Dean of the School of Education are members ex officio of all committees.

§ Elected by the Faculty.

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Harold Griffith Sutton
 Frances Kirkpatrick
 William Henry Myers

Frank Mark Weida
 Burnice Herman Jarman
 Ruth Harriet Atwell

COMMITTEE ON SCHOLARSHIP

Blake Smith Root, *Chairman*

William Henry Myers

Helen Bennett Lawrence

Kathryn Mildred Towne

GENERAL INFORMATION

INTRODUCTORY

It is the purpose of the School of Education to prepare teachers, supervisors, and administrators for the higher ranges of educational service and to offer opportunities to teachers of experience to extend their education. The School includes the departments of Education, Physical Education, and Home Economics. It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education.

The schedule of courses is arranged to meet the convenience of both full-time and part-time students. By attending evening, Saturday, and summer classes, teachers in the schools of Washington and vicinity may complete all the requirements for a degree without giving up their positions.

REGULATIONS

Students in the School of Education are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26, and the University regulations stated on pages 41-47.

AMOUNT OF WORK

A normal program of work for an undergraduate student is fifteen credit hours. A student with a quality-point index of 3.00 or higher may, with the Dean's permission, take eighteen hours. More than eighteen hours may not be taken except by special permission of the Committee on Scholarship.

For an employed student nine credit hours constitute a normal pro-

gram. A student with a quality-point index of 3.00 or higher for the preceding term may be permitted by the Dean to take twelve or thirteen credit hours.

For a graduate student twelve credit hours, exclusive of the thesis, constitute a normal program. An employed student may not take more than nine credit hours.

THE BACHELOR'S DEGREES

Upon the satisfactory completion of the undergraduate requirements of the School of Education, the degree of Bachelor of Arts in Education, Bachelor of Science in Home Economics, or Bachelor of Science in Physical Education is conferred.

The program of work of each student must be approved by a Faculty adviser. Since each student's program of work will be defined by his particular needs, it is important that the student have a clear conception of his major interest in education, and also that he be familiar with the teaching-certificate requirements in the locality in which he expects to teach.

REQUIREMENTS FOR THE DEGREES

To be recommended for a degree a student must satisfy the admission, residence, scholarship, and curriculum requirements.

RESIDENCE

Candidates for the Bachelor's degrees must complete satisfactorily at this University a minimum of thirty credit hours, nine of which, with the approval of the Adviser, may be in the College of General Studies off-campus courses.

For full details concerning continuous registration, see page 45.

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 41 and 42.

In order to graduate, a student must have a quality-point index of at least 2.00.

Probation.—An undergraduate student who fails to maintain a quality-point index of at least 2.00 will be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Suspension.—An undergraduate student who fails to pass in half or more than half of his work, based on a minimum of sixteen credit hours, will be suspended.

A student who has been suspended for poor scholarship may within

ten days appeal his case to the Committee on Scholarship through the Dean. If the case appears to be remediable and the student appears likely to improve in his scholarship thereafter, the Committee may readmit him on probation. A student who has been denied readmission on probation may petition the Committee on Scholarship through the Dean for readmission after the lapse of a calendar year. A student who has been suspended twice will not be readmitted.

CURRICULUM REQUIREMENTS

In any of the following curricula at least thirty credit hours must consist of courses numbered above 100.

Bachelor of Arts in Education

Programs leading to the degree of Bachelor of Arts in Education have three main objectives: (1) provision of general educational backgrounds, (2) a functional command of ideas, concepts, knowledges, and skills in one or more teaching fields, and (3) a mastery of basic professional information and skills adequate for a beginning teacher. Since the contents of teaching fields differ in scope and complexity, some programs are longer than others in terms of credit hours. None require less than 126 credit hours of satisfactory work, exclusive of required Physical Education. Normally, 60 credit hours of the total requirement are completed in the Junior College of the University or in an equivalent institution elsewhere. (See "Education", page 62.)

The general educational backgrounds needed by prospective teachers are obtained through: (1) pre-college education, (2) college courses, (3) work experience, (4) leadership activities, (5) participation in student campus activities, and (6) utilization of off-campus cultural opportunities.

Teaching-field requirements include satisfactory completion of prescribed academic courses in one or more fields, a satisfactory score on the special field examination of the National Teacher Examinations, and satisfactory completion of the prescribed special methods courses. Programs of study are available in the following fields: art, biology, business education, chemistry, elementary education, English, French, geography, German, history, home economics, mathematics, physics, social studies, Spanish, and speech.

Bachelor of Science in Home Economics

The curriculum leading to this degree is designed to prepare young women for the important responsibility of home-making. The program can be adapted, however, to meet special requirements in nutrition, dietetics, clothing, and other related fields. Each student must plan her

work with the assistance of a Faculty adviser in the Department of Home Economics.

GENERAL HOME-MAKING

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Home Economics 53.....	3		Home Economics 152.....	3	
Home Economics 72.....	3		Home Economics 171.....	3	
Home Economics 102.....	3		Home Economics 181.....	3	
Home Economics 123.....	3		Home Economics 192.....	3	
Physiology 115.....	3		Home Economics 197-98.....	6	
Electives.....	15		Psychology 29.....	3	
			Electives.....	9	
Total.....	30		Total.....	30	

Bachelor of Science in Physical Education for Men

There are three curricula leading to this degree. The Single-Major and Subject-Certification Teacher's Course is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Course prepares for the teaching of physical education in the larger schools. The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The minimum requirements for this degree are sixty-six credit hours, distributed as follows:

SINGLE-MAJOR AND SUBJECT-CERTIFICATION TEACHER'S COURSE

The minimum requirements for this degree are twenty-one credit hours in education, twenty-four credit hours in physical education, eighteen credit hours in an academic teaching field, and three credit hours in physiology, distributed as follows:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109-10.....	6		Education 131.....	3	
Education 121-22.....	6		Education 133-34.....	3	
Physical Education 103.....	3		Physical Education 115-16.....	4	
Physical Education 105.....	3		Physical Education 122.....	3	
Physical Education 107.....	1		Physical Education 131.....	3	
Physical Education 113-14.....	4		Physical Education 138.....	3	
Physiology 115.....	3		Academic teaching field.....	11	
Academic teaching field.....	7				
Total.....	33		Total.....	33	

SINGLE-MAJOR TEACHER'S COURSE

The minimum requirements for this degree are twenty-one credit hours in education, twenty-eight credit hours in physical education, three credit hours in physiology, and fourteen credit hours of electives:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109-12.....	6		Education 131.....	3	
Education 121-22.....	6		Education 133-34.....	6	
Physical Education 103.....	3		Physical Education 105.....	3	
Physical Education 107.....	1		Physical Education 122.....	3	
Physical Education 109-10.....	4		Physical Education 131.....	3	
Physical Education 113-14.....	4		Physical Education 138.....	3	
Physical Education 115-16.....	4		Electives.....	12	
Physiology 115.....	3				
Electives.....	2		Total.....	33	
Total.....	33				

PHYSICAL EDUCATION AND RECREATION COURSE

The minimum requirements for this course are sixty-six credit hours distributed as follows:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Education 109.....	3		Education 131.....	3	
Education 121-22.....	6		Education 133-34.....	6	
Physical Education 48.....	2		Physical Education 103.....	3	
Physical Education 107.....	1		Physical Education 122.....	3	
Physical Education 109-10.....	4		Physical Education 131.....	3	
Physical Education 113-14.....	4		Physical Education 138.....	3	
Physical Education 132.....	1		Physical Education 161.....	3	
Physical Education 151-52.....	6		Physical Education 162.....	3	
Electives.....	6		Electives.....	12	
Total.....	33		Total.....	33	

Bachelor of Science in Physical Education for Women

There are three curricula leading to this degree. The Dual-Major Teacher's Course is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Course prepares for the teaching of physical education in the larger schools. Within this course there is opportunity for specialization in dance, sports, or correctives. The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The minimum requirements for this degree are sixty-six credit hours distributed as follows:

DUAL- OR SINGLE-MAJOR TEACHER'S COURSE

The student desiring to prepare herself to teach another subject in addition to Physical Education for Women may do so by choosing her elective hours from one subject-matter field with the advice of the Dean of the School of Education. Relevant work completed in the Junior College may be counted in this subject-matter field.

JUNIOR YEAR	Credit Hours	SENIOR YEAR	Credit Hours
Education 109-10.....	6	Education 121-22.....	6
Physical Education 58.....	2	Education 133-34.....	6
Physical Education 101.....	3	Physical Education 113-14.....	4
Physical Education 103.....	3	Physical Education 121.....	3
Physical Education 105-6.....	6	Physical Education 122.....	3
Physical Education 107.....	1	Physical Education 131.....	3
Physical Education 115.....	2	Physical Education 138.....	3
Physical Education 118.....	2	Electives.....	6
Physical Education 132.....	1		
Physiology 115.....	3	Total.....	34
Electives.....	3		
Total.....	32		

PHYSICAL EDUCATION AND RECREATION COURSE

JUNIOR YEAR	Credit Hours	SENIOR YEAR	Credit Hours
Education 121-22.....	6	Education 133-34.....	6
Physical Education 48.....	2	Physical Education 103.....	3
Physical Education 58.....	2	Physical Education 113-14.....	4
Physical Education 101.....	3	Physical Education 132.....	1
Physical Education 105-6.....	6	Physical Education 138.....	3
Physical Education 107.....	1	Physical Education 161.....	3
Physical Education 109-10.....	4	Physical Education 162.....	3
Physical Education 115.....	2	Electives.....	9
Physical Education 118.....	2		
Physical Education 151-52.....	6	Total.....	32
Total.....	34		

Prescribed Courses in the Various Teaching Fields

ART

One two-term course from the following group.....	Credit Hours
Art 121-22: World History of Art	6
Art 151-52: Modern Art	
Art 161-62: History of Art Criticism	
Two term courses from the following group.....	6
Art 71-72: Introduction to the Arts in America	
Art 101-2: The Design of the Home	
Art 141-42: Interior Decoration	
Art 143: Folk Arts of America	

Two two-term courses from the following group.....	24
Art 67-68: Drawing and Painting—Life and Portrait	
Art 73-74: Drawing and Painting—Life, Still Life, and Portrait	
Art 165-66: Drawing and Painting—Life and Portrait	
Art 175-76: Drawing and Painting—Life and Portrait	
Art 179-80: Sculpture	
Art 183-84: Design and Commercial Art	
Education 141-42: Teaching Art.....	6
Total.....	43

BIOLOGY

Biology 1-2: Survey in Biology.....	6
Botany 1: Structure and Functions of the Flowering Plant.....	3
Home Economics 152: Nutrition.....	3
Physiology 115: Physiology.....	3
Zoology 1-2: Introduction to Zoology.....	8
Additional courses as approved by the Adviser.....	12
Education 144: Teaching Science.....	3
Total.....	38

BUSINESS EDUCATION

Accounting 1: Introductory Accounting.....	3
Economics 1-2: Principles of Economics.....	6
Secretarial Studies 51: Business Correspondence.....	3
Additional courses as prescribed in <i>one</i> of the following groups:	
Group 1—Secretarial Studies	
Secretarial Studies 2: Intermediate Typewriting.....	3
Secretarial Studies 12: Intermediate Shorthand and Transcription	3
Secretarial Studies 15: Advanced Shorthand, Typewriting, and Transcription	3
Secretarial Studies 16: Secretarial Shorthand, Typewriting, and Transcription	3
Secretarial Studies 54: Secretarial Practice.....	3
Additional courses from the following, as approved by the Adviser	
Accounting 2: Introductory Accounting	
Business Administration 101: Business Organization and Combination	
Business Administration 109: Office Management	
Business Administration 141: Principles of Marketing	
Business Administration 151: Retailing	
Economics 121: Money and Banking	
Political Science 127: Commercial Law	
Statistics 52: Mathematics of Finance	1
Education 150: Teaching Business Subjects.....	3
Total.....	35
Group 2—Bookkeeping, Business Arithmetic, and Business Law	
Accounting 2: Introductory Accounting.....	3
Business Administration 101: Business Organization and Combination	3
Business Administration 102: Business Management.....	3
Political Science 127-28: Commercial Law.....	6

Statistics 52: Mathematics of Finance.....	3
Two of the following courses, as approved by the Adviser.....	6
Accounting 111: Financial Statement Analysis	
Business Administration 121: General Insurance	
Business Administration 131: Business Finance	
Business Administration 138: Investments	
Economics 121: Money and Banking	
Education 150: Teaching Business Subjects.....	2
Total.....	38

Group 3—Distributive Education

Business Administration 141: Principles of Marketing.....	3
Business Administration 142: Marketing Problems.....	3
Business Administration 145: Sales Management.....	3
Business Administration 151: Retailing	3
Four of the following courses, as approved by the Adviser.....	12
Business Administration 146: Sales Management Problems	
Business Administration 147: Advertising	
Business Administration 150: Principles of Purchasing	
Business Administration 158: Traffic Management	
Business Administration 175: Introduction to Foreign Trade	
Business Administration 176: Exporting and Importing	
Education 150: Teaching Business Subjects.....	2
Total.....	38

CHEMISTRY

Chemistry 11-12: General Chemistry.....	8
Chemistry 21: Qualitative Inorganic Analysis.....	4
Chemistry 22: Quantitative Inorganic Analysis.....	4
Chemistry 151-52: Organic Chemistry.....	8
Chemistry 191: History of Chemistry.....	2
One of the following.....	8-10
Chemistry 111-12 and 113-14: Physical Chemistry	
Biochemistry 221-22: Biochemistry	
Education 144: Teaching Science.....	3
Total.....	37-39

ELEMENTARY EDUCATION

Education 113: Elementary School Art.....	3
Education 114: Elementary School Music.....	3
Education 128: Children's Literature.....	3
Science, as approved by Adviser.....	12-14
Geography 51: Introduction to Geography.....	3
Geography 52: World Regions.....	3
Physical Education 101: Physical Education in Elementary School..	3
Political Science 9-10: Government of the United States.....	6
Total.....	36-48

ENGLISH

English 1, 2: English Composition	6
English 52: Introduction to English Literature.....	3
English 71-72: Introduction to American Literature.....	6
English 125: The Evolution of Modern Speech.....	3
English 135-36: Shakespeare	6
Speech 11: Training the Speaking Voice.....	3
Three of the following term courses, with the approval of the Adviser	9
English 126: The Appreciation of Literature	
English 151-52: The Romantic Movement	
English 161-62: Victorian Literature	
English 165-66: The Twentieth Century	
English 171-72: Studies in American Literature	
English 173-74: Major American Poets	
English 176: American Drama	
English 177-78: American Fiction	
English 182: The English Novel	
English 199: Proseminar	
Education 136: Teaching English.....	3
Total.....	39

FRENCH

French 1-2: First-year French.....	6
French 3-4: Second-year French.....	6
French 9-10: French Conversation and Composition.....	6
French 51-52: Survey of French Literature and Civilization.....	6
Additional courses in French, as approved by the Adviser.....	12
Education 146: Teaching Foreign Languages.....	3
Total.....	39

GEOGRAPHY

Geography 51: Introduction to Geography.....	3
Geography 52: World Regions.....	6
Geography 71-72: Political Geography of the United States.....	6
Geography 103-4: Cartography.....	3
Geography 113: Geomorphology	6
Geography 114: Weather and Climate.....	6
Two of the following term courses.....	
Geography 181: Anglo-America	
Geography 183: Northwest Europe	
Geography 184: Mediterranean Region	
Geography 191: Middle America	
Geography 192: South America	
Geography 195: Eastern and Southeastern Asia	
Geography 198: Australia and the Pacific	
Two of the following term courses.....	6
Geography 125: Trade and Transportation	
Geography 126: Strategic Materials	
Geography 127: Industrial Geography	
Geography 128: Agricultural Geography	

Geography 131: Conservation of Natural Resources	
Geography 132: Land Use	
Geography 141: Geography of Settlement	
Geography 142: Urban Geography	
Geography 161: Geography of Soils	
Education 138: Teaching the Social Studies	3
Total	39

GERMAN

German 1-2: First-Year German	6
German 3-4: Second-year German	6
German 9-10: Conversation and Composition	6
German 51-52: Introduction to German Literature	6
Additional courses in German, as approved by the Adviser	12
Education 146: Teaching Foreign Languages	3
Total	39

HISTORY

History 39-40: The Development of European Civilization	6
History 71-72: The Development of the Civilization of the United States	6
Six credit hours, as approved by the Adviser, from each of the following groups	18
Group 1—American History	
History 171-72: Social History of the United States	
History 173: Representative Americans	
History 174: Economic History of the United States	
History 181-82: Diplomatic History of the United States	
Group 2—European History	
History 119: Thought and Culture of the Western World III: from the Reformation through the Age of Reason	
History 120: Thought and Culture of the Western World IV: Intellectual Aspects of the Modern Age	
History 130: Nationalism	
History 145-46: Russian History	
History 147: Economic History of Europe	
History 148: Oversea Expansion of Europe	
History 149-50: European Diplomatic History	
History 151-52: English History	
Group 3—Latin American History	
History 163: Latin American History—Colonial Period	
History 164: South America since Independence	
History 166: Mexico and the Caribbean since Independence	
Political Science 175: International Politics in the Western Hemisphere	
Political Science 176: Current Trends in Latin American Politics and Government	
Additional credit hours, as approved by the Adviser, from one of the foregoing groups	6
Education 138: Teaching the Social Studies	3
Total	39

MATHEMATICS

Mathematics 3:	College Algebra.....	3
Mathematics 6:	Plane Trigonometry.....	3
Mathematics 12:	Analytic Geometry.....	3
Mathematics 19:	Differential Calculus.....	3
Mathematics 20:	Integral Calculus.....	3
Mathematics 125:	Advanced Algebra.....	3
Mathematics 132:	Differential Equations, or	
Mathematics 139:	Advanced Calculus.....	3
An additional course in Mathematics, as approved by the Adviser....		3
Statistics 52:	Mathematics of Finance.....	3
Education 140:	Teaching Mathematics.....	3
Total.....		30

PHYSICS

Physics 5, 6, 7, and 8:	General Physics.....	12
Physics 55:	Physical Measurements.....	3
Physics 101:	Mechanics	3
Physics 105:	Principles of Electricity.....	3
Physics 106:	Optics	3
Chemistry Elective—Chemistry 11–12: General Chemistry or		
Chemistry 12–21: General Chemistry and Qualitative Inorganic		
Analysis		8
Mathematics 12:	Analytic Geometry.....	3
Mathematics 19:	Differential Calculus.....	3
Mathematics 20:	Integral Calculus.....	3
Six credit hours to be selected from the following.....		6
Physics 102:	Heat and Thermodynamics	
Physics 113:	Atomic Physics	
Physics 114:	Statistical Physics	
Physics 128:	Sound	
Physics 132:	Electronics	
Physics 155–56:	Advanced Physical Measurements	
Education 144:	Teaching Science.....	3
Total.....		50

SOCIAL STUDIES

History 39–40:	The Development of European Civilization.....	6
History 71–72:	The Development of the Civilization of the United	
States		6
Political Science 9–10:	Government of the United States.....	6
Two of the following courses.....		12
Economics 1–2:	Principles of Economics	
Geography 51, 52:	Introduction to Geography and World Regions	
Religion 59–60:	History of Religions	
Sociology 1–2:	Introductory Sociology	
Additional second-group courses, as approved by the Adviser, from one		
of the following fields: Economics, Geography, History, Political		12
Science, Religion, Sociology.....		3
Education 138:	Teaching Social Studies.....	
Total.....		45

SPANISH

Spanish 1-2: First-year Spanish.....	6
Spanish 3-4: Second-year Spanish.....	6
Spanish 9-10: Spanish Conversation and Composition.....	6
Additional courses, as approved by the Adviser.....	18
Education 146: Teaching Foreign Languages.....	3
Total.....	39

SPEECH

Speech 1: Effective Speaking.....	3
Speech 2: Extempore Speaking.....	3
Speech 11: Training the Speaking Voice.....	3
Speech 32: Oral Reading.....	3
Speech 101: Voice and Phonetics.....	3
Speech 131: Group Discussion and Conference Leadership.....	3
Speech 153: Play Production.....	3
Speech 175: Speech Correction.....	3
Education 136: Teaching English.....	3

One of the following areas of specialization, as approved by the Adviser:

Group 1—Speech Arts

Twelve credit hours to be chosen from the following..... 12

Speech 102: Oral Interpretation of Literature
Speech 109: Radio Speaking and Production
Speech 136: Public Discussion and Debate
Speech 148: Speeches for Special Occasions
Speech 154: Play Production
Speech 166: History of the Theatre
Speech 169: Creative Dramatics and Children's Theatre

Group 2—Speech Correction

Twelve credit hours to be chosen from the following..... 12

Speech 176: Speech Correction
Speech 177-78: Clinical Practice in Speech Therapy
Speech 180: Speech Pathology
Speech 182: Introduction to Hearing Problems
Speech 183-84: Clinical Practice in Hearing Therapy
Additional courses in English, Physiology, Psychology, or Speech, as approved by the Adviser

Total..... 39

PROFESSIONAL EDUCATION

The basic professional information and skills needed by beginning teachers are provided through four one-year courses, two in each of the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

Professional Courses

Education 109-10: Learning and Teaching.....	6
• Education 111-12: Elementary School Curriculum.....	6
Education 121-22: Society and the School.....	6
‡ Education 131: Common Teaching Skills.....	3
Education 133-34: Observation and Practice Teaching.....	6
‡ Education 136 to 150: Special Methods.....	2-6

Total..... 24-27

THE DEGREE OF MASTER OF ARTS IN EDUCATION

Upon the satisfactory completion of the graduate requirements of the School of Education, the degree of Master of Arts in Education is conferred. This is a professional degree, designed to prepare the student for some particular type of educational service. The program of studies leading to the degree is selected by the candidate and his Adviser from the various related departments of the University to give the student an adequate background in his chosen vocational field. For the prospective high school or junior high school teacher this will ordinarily include study in the subject which he is planning to teach as well as in the field of education.

In accordance with the foregoing general pattern of work, graduate programs of study are available in the following fields: (1) school administration—secondary school principalship or elementary school principalship; (2) adult education; (3) secondary education—senior or junior high school; (4) elementary education—intermediate grade or early childhood education; (5) agricultural extension education; (6) curriculum; (7) employee training; (8) guidance; (9) physical education. Programs of work for teachers-in-service are differentiated from those for students without teaching experience. Additional information concerning these programs may be obtained by writing to the Dean.

ADMISSION TO CANDIDACY

The requirements for admission to candidacy for the Master's degree are stated on page 19. Those desiring to prepare for positions in guidance or administration must have had at least two years of successful teaching experience. Candidates who have had no professional courses must satisfactorily complete the required undergraduate professional courses, including Observation and Practice Teaching, in addition to graduate course requirements.

• Not required for those preparing for secondary school teaching.
‡ Not required for those preparing for elementary school teaching

ADVANCED STANDING

Graduate work completed in other accredited institutions of learning may be credited toward the Master's degree, but a minimum of thirty credit hours must be completed at The George Washington University as a matriculated candidate in the School of Education.

Advanced courses completed in excess of the requirements for the Bachelor's degree in this University may be credited toward the Master's degree to the extent of twelve credit hours, provided the work fits in with the student's plan of specialization and is approved in writing by the Dean before being undertaken.

In determining advanced standing at the time of admission or readmission to Master's candidacy at this University, graduate work completed more than three years previously is not counted.

REQUIREMENTS FOR THE DEGREE

PLANS OF STUDY

Two plans of study lead to the degree of Master of Arts. *Plan 1* requires a minimum of thirty hours of graduate credit, including a thesis carrying six hours of graduate credit. *Plan 2* requires a minimum of thirty-three hours of graduate credit, including a course in *Educational Research Methods and Procedures* carrying three hours of graduate credit.

SELECTION OF COURSES

Programs of study under *Plan 1* must include a minimum of twelve credit hours from third group courses in addition to the thesis. Under *Plan 2* a minimum of eighteen credit hours, in addition to the course in *Educational Research Methods and Procedures*, must be from third group courses.

Programs of study must include a minimum of twelve credit hours from courses offered in the Department of Education.

When programs of study include additional academic preparation in one or more teaching fields, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements of the Bachelor of Arts degree in the teaching field concerned.

RESIDENCE

Candidates for the degree of Master of Arts in Education must complete satisfactorily at this University a minimum of thirty credit hours, nine of which, with the approval of the Adviser, may be in the College of General Studies off-campus courses.

THE THESIS

The thesis required under *Plan 1* must conform to standards prescribed by the Committee on Theses. A statement of these standards may be obtained at the Office of the Dean.

The thesis subject must be approved in writing by the candidate's adviser and recorded in the Office of the Registrar by the date announced in the University calendar. One typewritten original and three legible and complete carbon copies of the thesis in its final form must be presented to the Dean by the candidate not later than the date announced in the University calendar. Requirements regarding the form of the thesis are stated on page 45, and additional information will be supplied by the Dean.

Payment of tuition for the thesis will entitle the candidate, during the academic year of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period, it must be registered for again, and tuition paid on the same basis as for a repeated course.

COMPREHENSIVE EXAMINATION

In addition to the course examinations, the candidate must pass a professional comprehensive examination in two parts: (1) a general examination concerned with an integrated understanding of the major areas in professional education, and (2) a special examination concerned with the candidate's area of specialization.

The general part of the comprehensive examination is divided into three groups as follows: Group I (Foundations) covers learning and teaching, society and the school, child growth and development, history of education, philosophy of education, and educational research; Group II (Major Levels) covers elementary education, secondary education, adult education, employee training, vocational education, and physical education; Group III (Common Elements) covers administration, curriculum, evaluation, guidance, methodology, and reading.

The candidate must be prepared to answer two questions in each group, none of which shall include his area of specialization.

FIVE-YEAR PROGRAM

A candidate entering the School of Education from the Junior College (or with equivalent preparation) may choose a three-year program leading to the degrees of Bachelor of Arts and Master of Arts in Education to be conferred simultaneously. The first year of this combined program will be devoted to teaching-field preparation; the work of the

second year will include the Bachelor of Arts junior-year professional courses and a maximum of eighteen credit hours of graduate courses; that of the third and final year, senior-year undergraduate professional courses and the remaining graduate courses needed for the Master's degree. Observation and Practice Teaching to be elected in the third year may not be taken for graduate credit. A quality-point index of at least 2.50 must be attained before beginning the work of the senior year and the program must meet all the requirements of the degrees of Bachelor of Arts and the Master of Arts in Education.

THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education cannot be stated in credit hours, but they consist in general of at least two full years of work beyond the degree of Master of Arts in Education or the equivalent. The programs of study are designed to prepare students for administrative or supervisory positions, the teaching of education in normal schools or colleges, the teaching of an academic subject in schools or colleges, or for specialized types of educational service. The work is given a practical rather than a theoretical bent, and emphasizes the mastery and application of subject matter, both in the study requirements and in the dissertation. Special emphasis is placed upon the professional success of the candidate.

The candidate's program of study largely depends upon his previous educational background and his professional objective. Opportunities are provided for study leading to the following professional objectives: school superintendent, secondary school principal, supervisor, director of guidance, director of curriculum development, professor of education, and specialist in educational research.

QUALIFICATIONS OF THE APPLICANT

The candidate for the degree of Doctor of Education must have completed (1) graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education in The George Washington University, and (2) at least three years of successful educational experience.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the degree the applicant must be accepted by the Faculty of the School of Education on the basis of an examination conducted by a committee appointed by the Dean. This examination will usually include the following: (1) a written examination involving problems related to the applicant's background; (2) a scholastic-aptitude test; (3) an oral examination.

CONSULTATIVE COMMITTEE

If the applicant is accepted as a candidate, his consultative committee will counsel the candidate and guide his work.

The consultative committee, in cooperation with the candidate, will (1) determine the candidate's fields of study, in each of which the candidate must pass a written examination at least eight months before he presents himself for the degree; (2) formulate a list of course requirements and of readings that will assist him in preparing for the examinations; and (3) designate the tools of investigation that will be needed by the candidate in the prosecution of his study. These tools may include one or more foreign languages, statistical methods, historical criticism, or any others considered essential by the committee. An examination in the tools designated must be passed by the candidate before he takes his comprehensive examination.

THE DISSERTATION

When the candidate has satisfied the requirements of his consultative committee, the committee is dissolved. A member of the faculty, in whose field the topic of the dissertation falls, is then appointed to serve as the candidate's adviser on his dissertation and in his field of specialization, and to recommend him to the Dean for the final oral examination when, in his judgment, the candidate's dissertation is acceptable.

Not later than the date specified in the University calendar the candidate shall submit to the Dean of the School of Education four copies of his dissertation—one typewritten original and three legible and complete carbon copies, on official thesis paper—and also a typewritten summary of the dissertation consisting of not more than 2,500 words. Requirements regarding the form of the dissertation are stated on page 45, and additional information will be supplied by the Dean.

The successful candidate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE FINAL EXAMINATION

At least three weeks before the degree is to be conferred the candidate must pass an oral examination on his dissertation and on his field of specialization before a committee of the Faculty appointed by the Dean, supplemented by two experts from outside the University appointed by the President. This examination is open to the public and all are privileged to question the candidate. The Dean, or a member of the Faculty designated by him, will preside at this examination.

THE SCHOOL OF GOVERNMENT

THE FACULTY AND STAFF OF INSTRUCTION*

Arthur Edward Burns, Ph.D., *Dean of the School of Government*
Joe Lee Jessup, M.B.A., *Assistant Dean in the School of Government*

‡Richard Norman Owens, Ph.D., C.P.A., *Professor of Business Administration*

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*

Warren Reed West, Ph.D., *Professor of Political Science*

Frank Mark Weida, Ph.D., *Professor of Statistics*

Harold Griffith Sutton, M.S., *Professor of Finance*

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*

Ralph Dale Kennedy, Ph.D., *Professor of Accounting*

Wood Gray, Ph.D., *Professor of American History*

Thelma Hunt, Ph.D., M.D., *Professor of Psychology*

Arthur Edward Burns, Ph.D., *Professor of Economics*

§John Withrow Brewer, Ph.D., *Professor of International Law*

Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

Donald Stevenson Watson, Ph.D., *Professor of Economics*

Myron Law Koenig, Ph.D., *Professor of American History*

Arlin Rex Johnson, Ph.D., *Professor of Public Administration*

Everett Herschel Johnson, Ph.D., *Professor of Statistics*

Joe Lee Jessup, M.B.A., *Professor of Business Administration*

Robert Dale Campbell, Ph.D., *Professor of Geography*

Henry Furness Hubbard, Ph.D., *Adjunct Professor of Psychology*

William Crane Johnstone, Jr., Ph.D., *Professorial Lecturer in Political Science*

Gerhard Colm, Dr. rer. pol., *Professorial Lecturer in Economics*

Orton Wells Boyd, A.M., C.P.A., *Professorial Lecturer in Accounting*

James Carlton Dockeray, Ph.D., *Professorial Lecturer in Business Administration*

Montell Ernest Ogdon, Ph.D., *Professorial Lecturer in Business Administration*

Ralph Aubrey Young, M.B.A., Ph.D., *Professorial Lecturer in Economics*

* The President of the University, the Dean of Faculties of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Adjunct Professors, Associate Professors, and Assistant Professors constitute the Faculty.

‡ On sabbatical leave fall term 1953-54.

§ On sabbatical leave spring term 1953-54.

- Alfred Ernest Lampe, B.S., C.P.C.U., *Professorial Lecturer on Insurance*
- Karl Ernest Stromsem, Ph.D., *Professorial Lecturer on Public Administration*
- Jacques Jacobus Polak, Ph.D., *Professorial Lecturer in Economics*
- Joseph Leo Kreiger, M.B.A., *Professorial Lecturer in Business Administration*
- Edwin Lewis, M.B.A., *Professorial Lecturer in Accounting*
- Carl William Clewlow, A.M., *Professorial Lecturer in Business Administration*
- Eugene Fields, B.S., C.P.C.U., *Professorial Lecturer on Insurance*
- Fred Latimer Hadsel, Ph.D., *Professorial Lecturer in Political Science*
- Clarence McLaughlin, B.S., LL.B., *Professorial Lecturer in Accounting*
- Roger James Browne, B.S., Major General, United States Air Force, *Professorial Lecturer in Business Administration*
- Forest Carlyle Brimacombe, M.B.A., *Professorial Lecturer in Accounting*
- Ira Ernest Steele, A.M., *Professorial Lecturer in Accounting*
- James Leonard Buckler, A.M., *Professorial Lecturer in Accounting*
- Harold Jerome Bobys, A.B., C.P.A., *Professorial Lecturer in Accounting*
- William Columbus Davis, Ph.D., *Professorial Lecturer on Latin American History*
- Edward Campion Acheson, Ph.D., *Associate Professor of Finance*
- Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Associate Professor of Political Science*
- *Roderic Hollett Davison, Ph.D., *Associate Professor of European History*
- Merle Talmadge Welshans, Ph.D., *Associate Professor of Business Administration*
- James Norman Mosel, A.M., *Associate Professor of Psychology*
- Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
- James Coogan, Ph.D., *Assistant Professor of Economics*
- Richard Catlin Haskett, Ph.D., *Assistant Professor of American History*
- Gordon Barnewall, M.B.A., *Assistant Professor of Business Administration*
- Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*
- Walter David Fackler, A.B., *Assistant Professor of Economics*
- Frederick Charles Kurtz, M.B.A., C.P.A., *Assistant Professor of Accounting*
- Wilson Emerson Schmidt, Ph.D., *Assistant Professor of Economics*
- Solomon Kullback, Ph.D., *Lecturer in Statistics*
- William George Torpey, Ph.D., *Lecturer on Public Administration*

* On leave of absence 1953-54.

Sherman Cohen, A.B., LL.B., LL.M., *Lecturer in Business Administration*

Thomas Ewing Cotner, Ph.D., *Lecturer in Political Science*

Joseph Patrick Murphy, A.B., LL.B., LL.M., *Lecturer on Insurance*

John Samuel Myers, Ph.D., *Lecturer on Public Administration*

Augustus Clark Johnson, A.M., *Lecturer in Business Administration*

Harold Seidman, Ph.D., *Lecturer on Public Administration*

*Chester Hayden McCall, Jr., A.M., *Instructor in Statistics*

COMMITTEES ‡

THE DEAN'S COUNCIL §

1953

Everett Herschel Johnson

Roderic Hollett Davison

1954

Wolfgang Herbert Kraus

Donald Stevenson Watson

1955

Arlin Rex Johnson

Merle Talmadge Welshans

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Harold Griffith Sutton, *Secretary*

Ralph Dale Kennedy

Donald Stevenson Watson

Frank Mark Weida

EXECUTIVE COMMITTEE, BUREAU OF BUSINESS
AND ECONOMIC RESEARCH

The Dean of the School, *Chairman*

The Assistant Dean

Ralph Dale Kennedy

Everett Herschel Johnson

Donald Stevenson Watson

Merle Talmadge Welshans

COMMITTEE ON GRADUATE STUDIES

The Dean of the School, *Chairman*

The Assistant Dean

Richard Norman Owens

Donald Stevenson Watson

Ralph Dale Kennedy

Everett Herschel Johnson

Merle Talmadge Welshans

* On national service leave.

‡ The President of the University and the Dean of the School of Government are members ex officio of all committees.

§ Elected by the Faculty.

GENERAL INFORMATION

INTRODUCTORY

The George Washington University has provided training in both foreign service and governmental theory and administration throughout its history. This was one of its purposes when chartered in 1821. The School of Government was established in 1928 to bring together in various undergraduate and graduate curricula the work offered in foreign service and much of the other academic work in the theory and administration of government.

It is the purpose of the School to give the student an understanding of his responsibilities under the Constitution of the United States in the conduct of public office—domestic and foreign. This can be accomplished not through any single course but through a curriculum which correlates social, economic, political, historical, business, and psychological studies.

The program embraces both graduate and undergraduate work. Curricula leading to the Bachelor of Arts degree are offered in Foreign Affairs, Accounting, Business Administration, and Business and Economic Statistics. Graduate work leading to a Master's degree is available in each of these fields and in Economic Policy, Public Administration, Personnel Administration, and Vocational Counseling. Graduate study leading to the degree of Doctor of Business Administration is also available (see pages 175-76).

The Foreign Affairs program is broad, covering international political relations, international trade and finance, and regional studies. Its purpose is to equip students, by providing general background and specialized work, for careers in the field of American foreign relations. The diplomatic service of the United States, the several agencies of government with responsibilities in the international field, the international organizations, and American enterprise abroad offer opportunities in this field.

Governmental service requires special training and background in many other subjects, including economic research, statistical investigation, accounting, administrative management, and personnel administration. The academic background for such work is offered in the various curricula of the School and is described below.

REGULATIONS

Students in the School of Government are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26, and the University regulations stated on pages 41-47.

AMOUNT OF WORK

A full-time student not on probation may take ordinarily not more than seventeen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take not more than ten credit hours.

A full-time undergraduate student whose quality-point index is 3.50 or higher may take not more than nineteen credit hours. An undergraduate student employed more than twenty-four hours a week, whose quality-point index is 3.50 or higher, may take up to twelve credit hours.

Exception to these rules will require the approval of the Dean.

ATTENDANCE

The student is held responsible for all the work of the courses in which he is registered, and all absences must be excused by the instructor in charge before provision is made for him to make up the work missed.

CLASSIFICATION OF STUDENTS

A student who holds an Associate in Arts degree from the Junior College or the equivalent from another accredited institution, and who has registered his choice of one of the prescribed curricula at the Office of the Registrar, is classed as a *junior*. A student who has completed thirty credit hours in the School of Government is classed as a *senior*. A student who has satisfactorily completed the work for a Bachelor's degree and who has registered his choice of one of the prescribed fields of study at the Office of the Registrar, is classed as a *master in course*.

INDEPENDENT STUDY PLAN

Under the independent study plan a student of demonstrated capacity, with special interest in the subject matter of a course, may be permitted to undertake independent study under the personal direction of an instructor, in accordance with the rules of the division in which the subject falls. Credit under this plan is limited to the specific course credits as designated in the list of courses of instruction in this CATALOGUE.

THE DEGREE OF BACHELOR OF ARTS IN GOVERNMENT

Upon the satisfactory completion of the undergraduate requirements of the School of Government, the degree of Bachelor of Arts in Government, with a designation of the major field of study, is conferred. The major fields are Foreign Affairs, Accounting, Business Administration, and Business and Economic Statistics.

Students who have a special need for integrating courses from several departments or from more than one major field may request approval,

by a faculty committee, of a special major program. The same rules and regulations will apply as in the regularly offered majors.

Requirements for the undergraduate major in Economics and Public Administration are stated under the departments of Economics and Political Science, respectively.

REQUIREMENTS FOR THE DEGREE

SCHOLARSHIP

The system of grading and of computing scholarship is described in detail on pages 41 and 42.

In order to graduate, a student must have the following: (1) a quality-point index in all of his work of at least 2.00, and (2) a quality-point index of at least 2.50 in his major. The major includes the required courses and courses taken in the group options.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation, where he will remain as long as his quality-point index is below 2.00.

Suspension.—A student who has a quality-point index below 1.00 or who is placed on probation for a third term, whether successive or after an interval, will be suspended.

For the purpose of these rules, the summer sessions are considered a term.

A student suspended for poor scholarship may apply for readmission after an interval of a calendar year. He must then submit evidence to the Committee on Admission and Advanced Standing, that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

A student with a limited schedule is affected by the foregoing scholarship rules only when he has undertaken fifteen credit hours.

CURRICULUM REQUIREMENTS

For recommendation for graduation the School of Government requires, in addition to the appropriate Junior College work (see curricula on pages 64 and 65), a minimum of sixty credit hours during the junior and senior college years, as set forth in one of the following curricula:

Foreign Affairs		Credit Hours
Econ. 181-82...	International Economics.....	6
Hist. 150	European Diplomatic History Since 1871	
or Pol Sc. 171	International Politics.....	3
Hist. 181-82....	Diplomatic History of the United States.....	6

Pol. Sc. 172.... International Organization: the United Nations.....	3
Pol. Sc. 181-82. International Law.....	6
Language Advanced Composition and Conversation.....	6
Geography	3
Group Option... (To be selected from one of the following groups).....	18
Electives (To be selected in consultation with Adviser).....	9
Total.....	60

All foreign affairs majors must complete the *required* courses listed above. The group option provides specialization in international politics, or international economics, or a geographic region, depending upon the student's interest. Normally no more than six credit hours may be taken in an option other than the one selected. Consent of the Adviser must be obtained for such modification of the option selected.

Group I—International Political Relations

This group option (18 credit hours as noted in list above) is composed of courses in the departments of Political Science, History, and Geography which are related to the study of American diplomatic relations. The selection of courses must be made in consultation with the Adviser.

Group II—International Economic Relations

This group option (18 credit hours as noted in list above) is composed of courses offered primarily by the departments of Economics and Business Administration which are related to the study of American economic, financial, and business relationships with foreign countries. The selection of courses must be made in consultation with the Adviser.

Group III—Area or Regional Studies

This group option (18 credit hours as noted in list above) may be selected from courses offered in the departments of Economics, History, Political Science, and Geography, dealing with a geographic region such as Europe, Latin America, or the Pacific Area. This selection must be approved by the Adviser.

Business Administration

	Credit Hours
Bus. Adm. 101..... Business Organization and Combination.....	3
Bus. Adm. 102..... Business Management	3
Bus. Adm. 105..... Personnel Management in Industry.....	3
Bus. Adm. 131..... Business Finance	3
Bus. Adm. 141..... Principles of Marketing.....	3
Bus. Adm. 198..... Problems in Business Management.....	3
Acct. 155..... Business Budgeting.....	3
Econ. 121..... Money and Banking.....	3
Pol. Sc. 127-28..... Commercial Law	6
Group Option (to be selected from one of the following groups).....	30
Electives (to be selected in consultation with the Adviser).....	15
Total.....	60

All Business Administration majors must complete the *required* courses listed above. The group options shown below provide specialization in several aspects of business. Selection of the option and the courses (15 credit hours) to be taken in it must be made in consultation with the Adviser. Normally no more than 6 credit hours may be taken in an option other than the one selected.

Consent of the Adviser must be obtained if the student wishes such modification of his option group.

Group I—General Business

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Economics, and Statistics.

Group II—Personnel Management

This group option is made up of selected courses offered by the departments of Business Administration, Economics, Psychology, Speech, and Statistics.

Group III—Finance

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Economics, Political Science, and Statistics.

Group IV—Marketing

This group option is made up of selected courses offered by the departments of Business Administration, Economics, Geography, and Statistics.

Group V—Controllership

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, and Economics.

Group VI—Economics

This group option is made up of selected courses offered by the departments of Economics and Business Administration.

Group VII—Statistics

This group option is made up of selected courses offered by the department of Statistics.

Foreign Commerce.—Business Administration majors who wish to specialize in foreign commerce may request a modification of the above requirements. The modified major excludes some of the above required courses and adds others, such as a third year of foreign language, foreign markets, exporting and importing, economic geography, and other courses relating to overseas trade. Each program must be approved by the Adviser.

Accounting		Credit Hours
Acct. 101.....	Cost Accounting.....	3
Acct. 111.....	Financial Statement Analysis.....	3
Acct. 121-22.....	Intermediate Accounting.....	6
Acct. 171.....	Auditing	3
Bus. Adm. 102.....	Business Management.....	3
Bus. Adm. 131.....	Business Finance	3
Econ. 121.....	Money and Banking.....	3
Pol. Sc. 127-28.....	Commercial Law.....	6
Group Option (to be selected from one of the following groups).....		10
Electives (to be selected in consultation with the Adviser).....		15
Total.....		60

All Accounting majors must complete the *required* courses listed above. The group options shown below provide specialization in public accounting, commercial and industrial accounting, and governmental accounting and budgeting. Selection of the option and the courses (15 credit hours) to be taken in it must be made in consultation with the Adviser.

Group I—Public Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, and Political Science.

Group II—Commercial and Industrial Accounting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Economics, and Statistics.

Group III—Governmental Accounting and Budgeting

This group option is made up of selected courses offered by the departments of Accounting, Business Administration, Political Science, and Economics.

Business and Economic Statistics

	Credit Hours
Stat. 111.....Business and Economic Statistics I.....	3
Stat. 112.....Business and Economic Statistics II.....	3
Stat. 117.....Analysis of Variance.....	3
Stat. 118.....Correlation and the Chi-Square Test.....	3
Stat. 195-96.....Reading and Research in Business and Economic Statistics	6
Bus. Adm. 101.....Business Organization and Combination.....	3
Bus. Adm. 102.....Business Management.....	3
Econ. 101.....Economic Theory.....	3
Econ. 105.....Business Cycles	
or 106.....Income and Employment.....	3
Phil. 121-22.....Logic and Scientific Method.....	6
Electives (A)....(To be selected from Statistics).....	6
Electives (B)....(From Accounting, Business Administration and Economics in consultation with the Adviser).....	18
Total.....	60

EXAMINATIONS FOR WAIVING CURRICULUM REQUIREMENTS

A student desiring to omit a required course may take such examination as the department prescribes, and, on passing satisfactorily, he may be relieved of the curriculum requirement in that subject and may qualify for registration in an advanced course. Passing of this examination does not entitle the student to any hours of credit toward the degree.

A student desiring to take such examinations should make the request of the Dean and pay the required fee.

The candidate for the Master's degree who is deficient in undergraduate preparation may take a comprehensive examination on his undergraduate major field. Passing of this examination entitles the student to admission without taking specific courses to make up his deficiencies.

In courses taken to satisfy undergraduate deficiencies, the student must maintain at least a 3.00 average to be eligible for admission to graduate study.

THE MASTER'S DEGREES

Upon the satisfactory completion of the graduate requirements of the School of Government, one of the following degrees is conferred: (1) Master of Arts in Government with a major in Foreign Affairs, Eco-

conomic Policy, Accounting, Business and Economic Statistics, or Vocational Counseling; (2) Master of Arts in Public Administration in the fields of General Administration and Governmental Fiscal Administration; (3) Master of Arts in Personnel Administration; (4) Master of Business Administration.

ADMISSION TO CANDIDACY

A student is formally recognized as a candidate for the Master's degree only when his application for candidacy has been approved.

A 3.00 average in the undergraduate major is normally required for admission to graduate study.

Candidates for the Master of Arts degree in Foreign Affairs, or in Economic Policy must show a reading knowledge (certified by the appropriate language department) of at least one modern foreign language, to be approved by the Dean. Such examination should be taken before the student begins the second 15 hours of his work.

REQUIREMENTS FOR THE DEGREES

A minimum of thirty credit hours of work, as outlined in the curricula on pages 171-75, must be completed successfully. Variations from these curricula require the permission of the Dean.

No part of the minimum requirements may be taken in any other institution.

A second-group course (numbered 101-200) may be counted toward the Master's degree only when registration for advanced credit has been approved at the beginning of the course by the Dean and by the officer of instruction, and provided that the student has done such extra work in the course as may be prescribed by the instructor.

Work completed more than three years prior to registration for the Master's degree will be counted only if the candidate successfully passes an examination on the subject matter of the work offered for credit.

In addition to the course examinations, the candidate must pass a comprehensive written examination in his major field. An oral examination on his thesis may also be required.

No work counted toward a Bachelor's degree may be counted toward a Master's degree.

A student who expects to continue his studies for the degree of Doctor of Philosophy after receiving the Master's degree will be assisted in planning his program so that he can qualify for admission to candidacy for the Doctorate.

RESIDENCE

No credit is granted for work done in absentia, i.e., without formal instruction, except for the thesis, which may be completed in absentia with the permission of the department concerned.

SCHOLARSHIP

A student whose scholarship is unsatisfactory may be suspended by the Dean. Grades for graduate work are Excellent, Satisfactory, and Unsatisfactory; for further details, see page 42.

CURRICULUM REQUIREMENTS

A normal program includes a minimum of twenty-four credit hours of course work and the thesis (six credit hours), to be selected from the courses listed under the chosen major field, and such other courses as may be necessary. Programs should be prepared in advance in consultation with the Adviser and submitted to the Dean on the appropriate form; if the program is not completed at the time of registration this must be attended to not later than one month following registration.

THE THESIS

Students who plan to complete work for a Master's degree in one year should register for the thesis at the beginning of the year; otherwise the thesis should be registered for not later than the beginning of the final year. The choice of the thesis subject must be approved by the professor in charge and recorded in the Office of the Registrar by the date announced in the University calendar. The typewritten thesis in its final form must have the approval of the professor in charge and must be presented to the Dean by the student not later than the date announced in the University calendar. Requirements in regard to the form of the thesis are stated on page 45, and additional information will be supplied by the Dean.

Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the Faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year is granted without further tuition payment. If the preparation of the thesis extends beyond the two-year period, it must be registered for again, and tuition paid on the same basis as for a repeated course.

MASTER OF ARTS IN GOVERNMENT

This degree is offered in five different curricula which are described below.

Students who have a special need for integrating courses from two or

more of the major fields of concentration for the degree of Master of Arts in Government may request approval, by a faculty committee, of a special major program. All rules and regulations for the degree of Master of Arts in Government will apply to such special programs.

FOREIGN AFFAIRS

Prerequisite: an undergraduate major in foreign affairs, economics, history, or political science, depending upon the field of specialization. Any course deficiency in foreign affairs must be made up.

The program in Foreign Affairs is offered in three fields of specialization: International Economics, International Politics, and Regional Studies.

International Economics.—Graduate courses in economics (numbered 200 and over) in the field of international trade, the balance of payments, international financial policies, and international economic policies form the principal part of this specialization. Graduate courses in economic theory are recommended. Other courses may be included with the consent of the Adviser.

International Political Relations.—Graduate courses in political science and history (numbered 200 and over), in international law, international politics, international organization, diplomatic history, and American foreign policy, comprise the principal requirements for this specialization. Related courses may be added with the consent of the Adviser.

Regional Studies.—Graduate courses in economics, political science, history, and geography (numbered 200 and over) dealing with a geographic region, such as Latin America, Europe, or the Pacific Area, comprise the principal requirements. Other courses of broader scope in economics, history, and political science are recommended as part of the program. The Adviser in all cases must approve such selections.

The listing of graduate courses for these programs is given in the departmental offerings for Economics, History, Political Science, and Geography.

ECONOMIC POLICY

Prerequisite: an undergraduate major in economics or the equivalent.

Graduate courses in economics, especially those in the theory of economic policy, the level of income and employment, national income, economic stabilization, and monetary and fiscal policy, comprise the principal part of this program. Graduate courses in economic theory and statistics are recommended to complete the program. These courses and others that may be appropriate are to be selected with the consent of the Adviser.

ACCOUNTING

Prerequisite: an undergraduate major in accounting or the equivalent. The program in Accounting requires the following courses:

Acct. 231.....	Contemporary Accounting Theory.....	3
Acct. 271.....	Auditing Practice.....	3
Acct. 295-96.....	Seminar in Accounting.....	6
Bus. Adm. 231.....	Corporate Financial Problems.....	3

The remaining nine hours of course work are to be selected from courses in or related to accounting with the approval of the Adviser.

BUSINESS AND ECONOMIC STATISTICS

Prerequisite: an undergraduate major in business and economic statistics, or the equivalent; such work must include a minimum of 24 credit hours of second-group courses in statistics and a minimum of 18 credit hours in second group courses in accounting, business administration, and economics.

The Master of Arts program requires at least 12 credit hours of graduate courses in statistics. The remaining 12 credit hours are to be selected from graduate work offered by the departments of Accounting, Business Administration, Economics, and Statistics with the approval of the Adviser.

VOCATIONAL COUNSELING

Prerequisite: an undergraduate major in psychology, business administration, or education; or an undergraduate major in the social sciences appropriate to specialization in this field. The undergraduate background should include necessary basic training in such fields as psychology, sociology, statistics, labor economics, and business management or public administration.

The Master of Arts program in Vocational Counseling requires the following courses:

Psychology 220.....Seminar: Abnormal Psychology	
or	
Psychology 225.....Seminar: Mental Hygiene.....	3
Psychology 227.....Seminar: Counseling and Guidance.....	3
Psychology 228.....Seminar: Techniques of Counseling.....	3
Psychology 229.....Seminar: Occupational and Educational Information	3
Psychology 236.....Seminar: Analysis of the Individual for Purposes of Counseling.....	3

The remaining nine hours are elective, with the approval of the Adviser.

MASTER OF ARTS IN PUBLIC ADMINISTRATION

The purpose of the program for the degree of Master of Arts in Public Administration is to prepare graduates to enter public service in the field of administration and to advance the professional competence of graduates already in public employment. The major fields are General Administration and Governmental Fiscal Administration.

GENERAL ADMINISTRATION

Prerequisite: an undergraduate background in the social sciences appropriate to specialization in this field.

The program in General Administration requires Political Science 265-66, *Workshop in Public Administration*, and eighteen additional graduate credits to be selected from the following, with the approval of the Adviser:

Econ. 266.....Problems in Governmental Economic Policy..	3
Pol. Sc. 209-10.....Seminar: The Legislative Process.....	6
Pol. Sc. 213.....Readings in Comparative Government.....	3
Pol. Sc. 226.....Problems of Governmental Reorganization...	3
Pol. Sc. 239-40.....Principles and Problems of Personnel Administration	6

Pol. Sc. 241.....	Human Relations in Administration.....	3
Pol. Sc. 253.....	Staff Functions in Government Administration.....	3
Pol. Sc. 255.....	Administrative and Organization Theories and Problems.....	3
Pol. Sc. 258.....	Public Relations in Government Administration.....	3
Pol. Sc. 260.....	Administration of Major Governmental Programs.....	3
Pol. Sc. 262.....	Reading and Conference Course in Public Administration.....	1
Pol. Sc. 263-64.....	Analysis of the Administrative Process.....	6
Pol. Sc. 268.....	Government Corporations.....	3

GOVERNMENTAL FISCAL ADMINISTRATION

Prerequisite: an undergraduate background in the social sciences with emphasis on economics and business administration.

The program in Governmental Fiscal Administration requires Political Science 265-66, *Workshop in Public Administration*, and eighteen additional graduate credits selected from the following, with the approval of the Adviser:

Acct. 246.....	Governmental Accounting and Budgeting Problems.....	3
Bus. Adm. 291-92....	Seminar in Business Management.....	6
Bus. Adm. 295.....	Controllershship in the Federal Service.....	3
Bus. Adm. 296.....	Seminar in Controllershship.....	3
Econ. 223-24.....	Monetary Policy and Central Banking.....	6
Econ. 261-62.....	Public Finance and Fiscal Policy.....	6
Econ. 266.....	Problems of Governmental Economic Policy.....	3
Pol. Sc. 251-52.....	Budget Formulation and Execution.....	6
Pol. Sc. 253.....	Staff Functions in Government Administration.....	3
Pol. Sc. 255.....	Administrative and Organization Theories and Problems.....	3
Pol. Sc. 257.....	Public Policy Formulation and Administration.....	3
Pol. Sc. 258.....	Public Relations in Government Administration.....	3
Pol. Sc. 260.....	Administration of Major Governmental Programs.....	3

MASTER OF ARTS IN PERSONNEL ADMINISTRATION

The purpose of the program for the degree of Master of Arts in Personnel Administration is to train graduates in personnel management techniques and problems. While the emphasis is placed on governmental personnel work, the curriculum may be adapted to the interest of graduates who plan a career in personnel relations in business.

Prerequisite: an undergraduate major in the social sciences, business administration, or education, coupled with courses in personnel psychology, social psychology, or abnormal psychology.

The program requires twenty-four graduate credits, in general developed from the following, with the approval of the Adviser:

Bus. Adm. 291-92....	Seminar in Business Management.....	6
Econ. 241.....	Labor Economics.....	3
Econ. 244.....	Labor Relations.....	3

Pol. Sc. 239-40.....	Principles and Problems of Personnel Administration	6
Psych. 228.....	Seminar: Techniques of Counseling.....	3
Psych. 242.....	Seminar: Personnel Psychology.....	3
Psych. 244.....	Seminar: Job Analysis and Evaluation.....	3
Psych. 246.....	Seminar: Personnel Measurement Techniques	1
Elective.....		6

MASTER OF BUSINESS ADMINISTRATION

This curriculum provides the graduate student with the general and specialized training which will help him advance to responsible positions in business. Business training is also essential for many positions in government service and the program offers such training.

Normally, a student with an acceptable (B average) undergraduate major in Business Administration, or the equivalent, can complete the work for the Master of Business Administration in one year. All such programs must be approved by the Adviser. Students with course deficiencies, but with good academic records will be admitted to study for the Master of Business Administration and will be required to take up to 60 credit hours of work for this degree. The amount of work over and above 30 credit hours, and the courses to be taken, will be determined by the Adviser, with the approval of the Dean.

Graduate course work in Business Administration is listed on page
The Master of Business Administration program, with the approval of the Adviser, may include certain graduate courses from other departments, such as Economics, Accounting, and Statistics.

DOCTOR OF BUSINESS ADMINISTRATION

The work for this degree is under the supervision of the Committee on Doctoral Studies of the School of Government.

An applicant must have the degree of Master of Business Administration, Master of Arts in Business Administration, or Master of Arts in a related field, or the equivalent of such degrees, together with acceptable personal qualities and a capacity for creative scholarship. Each applicant must demonstrate his competence in Statistics and Accounting, either by qualifying examinations or acceptable university credits in these subjects.

After admitting an applicant, the Committee on Doctoral Studies, in consultation with the applicant, will designate six fields of study and appoint an Adviser to guide the student in his work in these fields. As part of this work, the student must complete a minimum of thirty credit hours in graduate courses. Additional course work may be prescribed by the Adviser.

When the applicant has satisfied his Adviser and the Committee of his

readiness to take the General Examination, this Examination will be scheduled.

The General Examination is a written comprehensive on fields of study not limited to the subject matter of courses taken in these fields. Two fields of study are required of all applicants: Economic Theory and Business and Economic History. The four additional fields, selected by the Committee and the applicant, will be drawn from the following list: Marketing, Organization and Management, Business Finance and Investments, Personnel Management, Public Administration, Accounting Theory, Money and Banking, Statistics, Risk and Risk Bearing, Transportation and Traffic Management, and such others as the Committee may designate.

Upon successful completion of the General Examination and approval of the subject of the doctoral dissertation, the student may be admitted to candidacy by the Committee on Doctoral Studies. The candidate's research and the preparation of his dissertation are supervised by a Research Adviser designated by the Committee.

The Final Examination of the candidate consists of his oral defense of the dissertation. The examination will be given by a committee appointed by the Committee on Doctoral Studies. Upon successful completion of this oral examination the candidate will be approved for the degree of Doctor of Business Administration by the Committee on Doctoral Studies.

SPECIAL PROGRAMS

The School of Government offers the Navy Graduate Comptrollership program for Naval officers sponsored by the Naval Post Graduate School. In cooperation with the College of General Studies, the School of Government is conducting the Air Force Manpower Management Training Program, sponsored by the Department of the Air Force. The School conducts a program for the training of Air Force Legislative Officers, also sponsored by the Air Force.

The School of Government cooperates with the College of General Studies in the off-Campus program of that College, particularly in the fields of controllership and management.

The Department of Business Administration offers work in the field of property and casualty insurance as part of the educational program of the American Institute for Property and Liability Underwriters, Inc.

FOREIGN SERVICE REVIEW COURSE

The School of Government is continuing to offer its summer Foreign Service Review Course, started in 1946, for persons interested in preparing for the written Foreign Service Examination given by the Department of State.

Since this Course is primarily an intensive review of college work already completed, and is offered as a service to the superior graduate student who wishes to prepare for the written Foreign Service Examination, no academic credit will be given.

Subjects to be reviewed during the 1953 Course will include the following: American History and American Diplomatic History; European History and European Diplomatic History; Principles of Economics (including International Economics and Foreign Exchange); Geography; General Statistics; English Composition; Races, Languages, and Religions; Contemporary Affairs.

For further details, including authorization by the Department of State, admission requirements, fees, and living accommodations, address The Director, Foreign Service Review Course, School of Government.

BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau, an established part of the School of Government, conducts research in both the fields of business and economics. This work is under the direction of the Executive Committee of the Bureau of Business and Economic Research. Special attention is given to problems of the metropolitan area of Washington, D. C. Research projects are also sponsored by public and private agencies. Both faculty and students of the School of Government participate in the activities of the Bureau of Business and Economic Research. Results of research activities as well as abstracts of selected masters' theses are reproduced and disseminated by the Bureau.

THE COLLEGE OF GENERAL STUDIES

Mitchell Dreese, Ph.D., *Dean of the College of General Studies*
John Francis Latimer, Ph.D., *Assistant Dean of the College of General Studies, Director of the Off-Campus Division*
Mary Ellen Coleman, A.M., *Director, Reading Clinic*
Karl Ernest Stromsem, Ph.D., *Adviser on Government Intern Scholarships*
Leonard Walton Vaughan, A.M., *Director, George Washington Counseling Center*

THE DEAN'S COUNCIL*

Benjamin Douglass Van Evera
Burnice Herman Jarman
Ralph Windsor Ruffner

GENERAL INFORMATION

INTRODUCTORY

The College of General Studies of The George Washington University, established in 1950, is designed primarily to supplement the adult education opportunities previously available at the University. It includes the following divisions: (1) the Off-Campus Division; (2) the Campus Division; and (3) the Division of Community Services.

OFF-CAMPUS DIVISION

In recent years, employee in-service training has been increasingly emphasized in government, education, business, and industry. Service personnel in nearby military and naval installations have likewise been increasingly interested in off-duty education as a means of working toward academic degrees or promotions in rank. The Off-Campus Division of the College of General Studies works closely with personnel administrators, training officers, school officials, and others interested in developing programs of in-service training and brings the educational resources of the University to bear on such programs. Credit and non-credit courses are organized in any field in which there is sufficient demand and for which instructional facilities can be made available. These courses meet at the time and place most convenient for the students enrolled and may begin at any time of the year. Credit courses

* The President of the University, the Dean of Faculties of the University, and the Dean of the College are members ex officio of the Council.

are accepted by any school or college of the University provided (1) the student is accepted for degree candidacy in that school or college; (2) the courses in question are within the scope of the curriculum requirements; and (3) the maximum number of credit hours which can be taken in any school or college of the University other than that in which the student is a degree candidate is not exceeded. Credit courses may also be transferred to other colleges and universities.

Admission to Course Work

Admission to an off-campus course does not constitute admission to degree candidacy or to a campus division of the University.

A simplified procedure for admission and registration in off-campus courses is conducted at or prior to the first meeting of the class. Transcripts of previous academic work are not required. Registration in credit courses is restricted to those whose qualifications indicate that they are able to complete the course successfully. In general, off-campus non-credit courses are open to any individual interested in enrolling. However, when a course is organized at the request of some particular agency or group, admission may be restricted to the students recommended by the sponsoring organization. A limit on the size of classes may have to be imposed in order to maintain the quality of instruction.

Admission to Degree Candidacy

In agencies and service installations where there is sufficient enrollment to permit offering the necessary range of courses, it is possible to earn the Associate in Arts, Bachelor of Arts, or Master of Arts degrees, without campus study. For further information, see the bulletin of the College of General Studies.

CAMPUS DIVISION

This Division has been established in recognition of the fact that there are adults, well qualified to undertake a particular program of college work, whose academic preparation would not ordinarily qualify them for admission to a previously established school or college of the University, at least not without considerable prerequisite work. It is also recognized that an adult, through his work experience, may have gained competency in some particular area of learning. This knowledge may be validated by special examinations to entitle him to advanced standing toward a degree. For further information, see the bulletin of the College of General Studies.

DIVISION OF COMMUNITY SERVICES

This Division was organized to meet several different educational needs.

Non-credit courses in a wide variety of subject fields will be set up at the request of any interested group. There will be no entrance requirements. The length of each course will be determined by the wishes of the sponsoring group and the nature of the subject to be studied.

The George Washington University Reading Clinic offers both diagnostic and corrective work for small groups or individuals and reading improvement techniques for small classes. All courses are designed to meet particular individual needs whether on a remedial basis or for accelerated reading comprehension.

The Government Management Intern Scholarship Program offers annually fifty scholarships to assist federal agencies in training carefully selected young men and women for administrative leadership in the government career service. Each scholarship provides a tuition-free course of three credit hours a term and appropriate academic credit (up to six credit hours) for the successful completion of training assignments required in any agency program which has been evaluated by the University.

The George Washington Counseling Center offers counseling programs designed to assist individuals in making vocational and educational plans. The services offered include the following: (1) aid in vocational choice; (2) checking present training objectives; (3) diagnosis of academic difficulties; (4) determining suitability of present job; and (5) assistance in understanding individual's abilities, aptitudes, and interests.

FEES

The tuition fee for off-campus credit courses in other than service installations for service personnel is \$12 per credit hour. Through a contractual relationship with nearby naval and military installations, it has been possible to offer instruction to service personnel in these installations at the reduced tuition rate of \$30 per three-credit course. However, in service installations located more than 30 miles from the campus, in order to cover the additional expense of the instructors' travel it is necessary to charge a tuition of \$12 per credit hour. The fees for non-credit courses and eight-week credit courses are payable in full at the first meeting of the course. By special arrangement in fifteen-week credit courses, payments may be made in three equal installments.

THE DIVISION OF UNIVERSITY STUDENTS

Elmer Louis Kayser, Ph.D., LL.D., *Dean of the Division of University Students*

John Gage Allee, Jr., A.M., *Assistant Dean of the Division of University Students*

THE DEAN'S COUNCIL •

Ralph Dale Kennedy

Francis Edgar Johnston

Charles Rudolph Naeser

GENERAL INFORMATION

INTRODUCTORY

The Division of University Students was established in 1930. In this Division are registered mature students who wish to undertake University courses for credit either here or elsewhere or as auditors but who are not at this time working toward degrees in this University.

REGULATIONS

Students in the Division of University Students are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26; the University regulations stated on pages 41-47; and the regulations concerning PROBATION, SUSPENSION, AND WARNINGS which are the same as those stated on pages 58 and 59 under the Junior College

TRANSFER TO REGULAR STATUS

A "University student" may be transferred, at his request, to another college or school of the University only upon complying with the regulations of the specific college or school to which he wishes to transfer. The student should familiarize himself with the regulations printed in the University CATALOGUE concerning admission, residence, amount and quality of work.

• The President of the University, the Dean of Faculties of the University, and the Dean and the Assistant Dean of the Division are members ex officio of the Council.

THE DIVISION OF SPECIAL STUDENTS

Warren Reed West, Ph.D., *Dean of the Division of Special Students*

THE DEAN'S COUNCIL*

Carl Hugo Walther Thelma Hunt Fred Salisbury Tupper

GENERAL INFORMATION

INTRODUCTORY

The Division of Special Students was organized in 1944. To this Division may be admitted students who are in the process of qualifying for degree candidacy. Students in this Division are designated "special students".

REGULATIONS

Students in the Division of Special Students are subject to, and are expected to familiarize themselves with, the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26; and the University regulations stated on pages 41-47.

SCHOLARSHIP

A student in this Division may be dropped for reasons of scholarship at any time his quality-point index falls below 2.00.

The system of grading and computing scholarship is described in detail on pages 41 and 42.

ACADEMIC SCHEDULE

The schedule of the "special student" is made up of courses required in the curriculum to which he wishes to transfer. The choice of courses must be approved by the Dean. If the student has not completed the language requirements of this curriculum at the time of his admission to the University, he must include three hours of language in each twelve hours of work until this requirement is met. Second- or third-group courses may not be taken unless all first-group requirements have been met or are being met concurrently.

In each individual case, the schedule will be reduced when it is deemed advisable.

* The President of the University, the Dean of Faculties of the University, and the Dean of the Division are members ex officio of the Council.

TRANSFER TO REGULAR STATUS

A "special student" may be transferred to another college or school of the University only upon complying with the regulations of the specific college or school to which he wishes to transfer. The student should familiarize himself with the regulations printed in the University CATALOGUE concerning admission, residence, and amount and quality of work. Specifically, he should note that in some cases not more than forty-five (45) hours of credit may be transferred from this Division; and that both the residence and scholarship requirements of the school to which he is transferring must be met.

ADVISORY SYSTEM

Students in the Division of Special Students are expected to consult with an adviser in the Office of the Dean at least once each term. Any student who has a question in regard to his status, or whose grades are below C, or who is in other academic difficulty, is urged to make an appointment promptly without waiting for a request from the Dean.

DIVISION OF AIR SCIENCE

Walter Grant Bryte, Jr., B.S., Colonel, United States Air Force, *Director of Air Science*

COMMITTEE ON MILITARY SERVICE DELAY AND SELECTION FOR THE
ADVANCED COURSE *

Robert Kenyon Schubert, *Chairman*
Fred Everett Nessell Robert Oliver Weyburn

GENERAL INFORMATION

INTRODUCTORY

On July 1, 1951, an Air Force Reserve Officers' Training Corps (Air Force ROTC) unit was established at the University under the authority of section 40-47C of the Act of June 3, 1916 (National Defense Act) as amended. Air Force personnel approved by the President of the University, are detailed to the Department of the Air Force for supervision and instruction of the unit. Eligible male students enrolled full time for work leading to a Bachelor's degree may elect to take the Air Force ROTC course. A total of twenty hours of elective credit, earned in this program, may be applied toward a degree—two hours a term for the basic course and three hours a term for the advanced course.

Tomorrow's Air Force leaders are today's students in the Air Force Reserve Officers' Training Corps, which is now recognized as a principal source of United States Air Force officers. The qualities required of an Air Force leader are essentially the same as those required of any good citizen of this country; and the training received in this program will prepare the student to take his place more effectively in society wherever he may be needed.

THE AIR FORCE RESERVE OFFICERS' TRAINING CORPS PROGRAM

The mission of the Air Force ROTC program is to select and prepare students through a permanent program of instruction to serve as commissioned officers in the Regular and Reserve components of the United States Air Force. This program takes into consideration the fact that many of the academic subjects in which college students are enrolled have as much direct relationship to a military career as they have to a civilian career. The Air Force Reserve Officers' Training Corps

* The President of the University, the Dean of Faculties of the University, and the Director of the Division are members ex officio of this Committee.

courses have been carefully selected to augment those academic subjects which will prepare the student for future service as an Air Force Officer. They also afford a means for practical training in organization, leadership, and discipline, which will be of value after graduation in an industrial or professional career. The duties and responsibilities of squadron level officers, oral and written expression, and the techniques of the problem solving process are emphasized throughout the course both in theory and practice. Even those students who are not selected for the advanced course or to receive commissions will have received military training which will be of value to the Nation and to themselves in an emergency.

COURSE OF STUDY

The course of study is divided into the basic course covering the first two years and the advanced course covering the junior year, summer camp, and senior year, in that order. The course consists of blocks of instruction totaling 480 hours, allocated as follows: freshman and sophomore years, 90 hours each; junior and senior years, 150 hours each. In addition, the summer camp provides 232 hours.

The course is designed to fulfill required academic standards in order that cadets may receive credit in proportion to their academic load; to provide that fundamental training, both personal and professional, which will best fit the cadet to become a well-rounded junior Air Force officer possessing a high growth potential; and to develop and stimulate a growing desire on his part to enter the Air Force flight training program.

The basic course was designed with two additional objectives in mind: first, to interest the cadet in continuing in the Air Force ROTC and ultimately making the Air Force his career; and second, to prepare him along lines that will prove of long range value to the Air Force whether he returns to civil life or becomes a member of the USAF.

See "Department of Air Science and Tactics" for a list of the subjects covered. In addition thereto, orientation flights, Link trainer time, and field trips to nearby Air Force bases are available to selected cadets on a voluntary basis.

ELIGIBILITY REQUIREMENTS

Membership in the Unit, which is voluntary, is open to any regularly enrolled full-time, male student who is a citizen of the United States, between the ages of 14 and 25, physically qualified, of good character, and a candidate for a Bachelor's degree. Students who successfully complete the basic course or have equivalent active military training may be selected to enter the advanced course. Students in the advanced course receive from the Government a subsistence allowance of approximately \$500 at the rate of \$81.00 a quarter, which is exempt from

income tax. During the period of the summer camp, the advanced student receives \$75 a month, food, lodging, and travel expense. Uniforms, textbooks, and training materials are provided for all Air Science courses.

STUDENT HONORARY MILITARY SOCIETIES

The Arnold Air Society.—A national honorary military society of Advanced Air Force ROTC cadets established for the purpose of furthering the mission, traditions, and concept of the United States Air Force as a means of national defense, to promote American citizenship and to create a close and more effective relationship among the Air Force ROTC cadets. The national organization founded in 1947, was named in honor of the late General of the Air Force Henry Harley Arnold. The local squadron established in 1952, was named in honor of General Carl Spaatz (retired) who was the first Chief of Staff of the United States Air Force. Only advanced Air Force ROTC cadets are eligible for election to membership. Members are authorized to wear a blue and gold auguilette and ribbon on their cadet uniforms.

Pershing Rifles.—A national honorary military society founded in 1894 by Lieutenant (later General of the Armies) John Joseph Pershing. Its purpose is to encourage, preserve, and develop the highest ideals of the military profession, promote American citizenship, create a closer and more efficient relationship, and provide appropriate recognition of a high degree of military ability among the cadets of the several Senior Reserve Officers' Training Corps units. Only basic ROTC cadets are eligible for election to membership. Members are authorized to wear a blue and silver cord and ribbon on their cadet uniforms.

Flying Sponsors.—A local women's honorary organization established in 1952 to sponsor Air Force ROTC activities and encourage applications for flying training.

REGULATIONS

Students in the Division of Air Science are subject to and are expected to familiarize themselves with the regulations concerning ADMISSION, REGISTRATION, FEES AND FINANCES stated on pages 12-26; the University regulations stated on pages 41-47; the regulations of the college, school, or division in which enrolled; and the regulations of the United States Air Force pertaining to Air Force ROTC cadets. A copy of Cadet Regulations is issued to each student upon enrollment.

A student enrolling in the basic course must agree to complete the two year course as a prerequisite for graduation from the University. A student if selected for enrollment in the advanced course, must sign a contract to complete the course as a prerequisite to graduation; attend a six-week summer camp; if and when tendered, to accept a Reserve commission for an indefinite term; and to serve a period of two years on

active duty, after receipt of his commission, when and if called by the Secretary of the Air Force.

MILITARY SERVICE DELAY

Deferment from induction under the Selective Service Act of 1951 may be granted to selected students within authorized quotas. Normally, students are not considered for draft deferment until the completion of one term's work in the University with a quality-point index above 2.00. This index must be maintained or the deferment is withdrawn. Students who are deferred and whose deferments are subsequently cancelled or become subject to cancellation because they failed to comply faithfully with all conditions under which deferments were originally granted are not again eligible for deferment under the provisions of this Regulation without the approval of the Chief of Staff, USAF, in each individual case.

If selected to receive a deferment, the student must agree to complete the basic course, if enrolled therein; to enroll in and complete the advanced course at the proper time, if accepted therefor; upon completion or termination of the course of instruction therein, to accept a commission, if tendered; to serve on active duty for a period of not less than two years after receipt of such commission, subject to call by the Secretary of the Air Force; and to remain a member of a Regular or Reserve component of the Air Force until the eighth (8th) anniversary of the receipt of his commission.

It is the student's responsibility to notify his local board of this agreement and the termination thereof, as well as to notify the Director of Air Science whenever he intends to transfer to another institution.

THE SUMMER SESSIONS

Burnice Herman Jarman, A.M., Ed.D., *Director of the Summer Sessions*

DIRECTOR'S COUNCIL*

Wood Gray

Ira Bowers Hansen

During the summer of 1953 the University offers an eight-week session for undergraduate and graduate students in the Arts and Sciences. The Law School offers work in two six-week sessions. The School of Education offers a special six-week session for teachers, with a pre-session of three weeks and a post-session of three weeks.

During the summer of 1953, courses are offered in the Junior College, Columbian College (the senior college), the Law School, the School of Pharmacy, the School of Education, the School of Government, the College of General Studies, and the Division of Air Science.

For a complete statement concerning summer-term work, see the Summer Sessions catalogue.

* The President of the University, the Dean of Faculties of the University, and the Director of the Summer Sessions are members ex officio of the Council.

ADMINISTRATIVE UNITS

HEALTH ADMINISTRATION

Daniel LeRay Borden, A.M., M.D., *University Surgeon, Director*
Howard Robert Unger, M.D., *University Physician*
Sally Steele MacDonald, A.B., M.D., *Associate University Physician*
Robert Howe Harmon, A.B., M.D., *Associate University Physician*
Ronald Atmore Cox, A.B., M.D., *Associate University Physician (Eye)*
Richard Bernard Castell, A.B., M.D., *Associate University Physician*
Alfred Brigulio, M.D., *Associate University Physician*
Hugh Osgood House, M.D., *Associate University Physician (Nose and Throat)*
Juanita Love, R.N., *Nurse-Secretary*

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9.00 A.M. to 5.00 P.M. with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school;* (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team

* A charge of \$2 for a special physical examination is made by the University if a student fails to appear for a physical examination during the period set for this purpose.

is required to pass a thorough examination at the beginning of each term; (5) the above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in inter-collegiate or intra-mural games, or in any of the activities of the physical education departments.

VETERANS EDUCATION

The Office of Veterans Education of The George Washington University operates as a service bureau for veterans interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration. Here information may be obtained concerning the educational program of the University and the procedure for securing the educational benefits for veterans of World War II (Public Law 346) or "Korean" veterans (Public Law 550).

PUBLIC LAW 346

At least thirty days prior to registration the veteran desiring to attend under this GI Bill should apply to the Regional Office of Veterans Administration, 1825 H Street, NW., for a Certificate of Eligibility and Entitlement, for presentation to the Office of Veterans Education at the time of registration. Veterans who have attended another institution under the GI Bill must obtain a Supplemental Certificate of Eligibility to present to this University.

Attention is invited to the provision of law which prescribes that courses under this GI Bill must be "initiated not later than four years after either the date of discharge or the termination of the present war, whichever is the later". For most veterans this means that the course must have been initiated by July 24, 1951. This deadline date has several important implications for veterans to whom it applies: (1) changes of course or of institution are much more difficult to get approved by the Veterans Administration than formerly; (2) veterans, with few exceptions, will be required to maintain continuity in course by taking at least one subject each fall term and each spring term; and (3) in most cases veterans who withdraw from the University during the fall term, the spring term, or a summer term will be considered to have terminated their courses and thus forfeited further educational benefits. Any veteran who has interrupted his training during a term must secure authorization to reenter from Veterans Administration to be presented at the time of registration.

Veterans already enrolled in the University are requested to consult the Office of Veterans Education prior to making any changes in academic program, because of changes in Veterans Administration regulations concerning Supplemental Certification.

PUBLIC LAW 550

In order to be eligible for the benefits under this GI Bill, a veteran must have been in service since June 27, 1950, and must no longer be

on active duty. For further information concerning these benefits, it is suggested that he contact the Office of Veterans Education or the Regional Office of the Veterans Administration, 1825 H Street, NW.

At least thirty days prior to registration the veteran desiring to attend under this GI Bill should apply to the Regional Office of Veterans Administration, 1825 H Street, NW., for a Certificate of Education and Training, for presentation to the Office of Veterans Education at the time of registration. A photostatic copy of separation papers must accompany the original application for certification.

VOCATIONAL REHABILITATION

Disabled veterans desiring vocational rehabilitation under either GI Bill should apply to the Regional Office of Veterans Administration, 1825 H Street, NW., for approval of their training objectives at least sixty days prior to registration.

ADMISSION

The entrance requirements for the Junior College, Columbian College, and the School of Government, in other than the pre-professional curricula, have been somewhat modified for veterans who are deficient in the regular requirements for admissions, but who have been found by psychological and educational tests able to undertake college work. Veterans who have been enrolled in another educational institution since leaving the service, or who have been out of the service for more than one year prior to the beginning of the term for which they seek admission, must qualify under the regular admissions policies. (For admission requirements and procedure, see pages 12-21.)

Credit for work done in the service schools is granted by the Junior College, Columbian College, the School of Engineering, and the School of Government provided the veteran has not been out of the service for three years or more. To be considered for such credit veterans should submit to the Director of Admissions photostatic copies of their records indicating courses successfully completed with sufficient identification of the course to enable the Admissions Office to locate it in the Guide to Evaluation of Educational Experience in the Armed Forces.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

On the following pages of this CATALOGUE, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered by the University in the summer of 1953 and in the academic year 1953-54. The courses as here listed are subject to some slight change. The University reserves the right to withdraw any course announced.

HOURS OF INSTRUCTION

Courses of instruction are scheduled in the morning, afternoon, and evening. Evening classes are identical with daytime sections of corresponding courses, are taught by the same instructors, and carry the same amount of credit. By taking the evening and summer classes and extending the time of study beyond the customary four years, a student who is able to give only part of his time to college work may complete a regular curriculum and obtain a degree.

EXPLANATION OF COURSE NUMBERS

An odd number preceding the name of the course indicates that the course is offered in the fall term; an even number, that it is offered in the spring term; and a double number (157-58), that it begins in the fall term and continues in the spring term. The letter "x" following an odd course number (e.g., 21x) indicates that the course, normally offered in the fall term, is given in the spring term. The letter "x" following an even course number (e.g., 22x) indicates that the course, normally offered in the spring term, is given in the fall term.

In the departments of the School of Medicine, first-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and fourth-year courses, from 401 to 500. This includes courses open to both medical and nonmedical students. Courses limited to nonmedical students follow the numbering system used in "all other schools and colleges" (see below).

In the Law School, first-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and graduate courses, from 401 to 500.

In all other schools and colleges the following system of numbering is used:

First-group courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the adviser and the dean, they may also be taken by juniors and seniors.

In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the officer of instruction, to qualified seniors; they are not open to Junior College students or other undergraduates.

INDICATION OF THE AMOUNT OF CREDIT

The number of credit hours given for the satisfactory completion of a course is, in most cases, indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each term is marked (3-3), and a term course giving three hours of credit is marked (3). A credit hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one term.

A dagger (†) preceding the number of a year course indicates that the course may not be entered in the second term and that credit will not be given until the work of both terms has been completed.

ACCOUNTING

Ralph Dale Kennedy, Ph.D., *Professor of Accounting, Executive Officer*
 Orton Wells Boyd, A.M., C.P.A., *Professorial Lecturer in Accounting*
 Edwin Lewis, M.B.A., *Professorial Lecturer in Accounting*
 Clarence McLaughlin, B.S., LL.B., *Professorial Lecturer in Accounting*
 Forest Carlyle Brimacombe, M.B.A., *Professorial Lecturer in Accounting*
 Ira Ernest Steele, A.M., *Professorial Lecturer in Accounting*
 James Leonard Buckler, A.M., *Professorial Lecturer in Accounting*
 Harold Jerome Bobys, A.B., C.P.A., *Professorial Lecturer in Accounting*
 Frederick Charles Kurtz, M.B.A., C.P.A., *Assistant Professor of Accounting*

Associate in Arts (Junior College—Two-year vocational curriculum in Accounting).—For curriculum, see pages 65-66.

Bachelor of Arts and Master of Arts in Government with a major in Accounting (School of Government).—See pages 168-69, 172.

FIRST GROUP

1-2 *Introductory Accounting (3-3)*

The Staff

Study of basic principles underlying accounting records used by single proprietorships, partnerships, and corporations; preparation of the work sheet and financial statements; introduction to cost accounting and to valuation and income determination problems. Prerequisite to Accounting 2: Accounting 1 or permission of the instructor. Morning and evening sections. (Also offered 1953 summer term.)

Accounting 1x, same as 1, offered spring term. Morning and evening sections.

Accounting 2x, same as 2, offered fall term. Morning and evening sections.

3 *General Accounting (3)*

Study of accounting theory and practice with emphasis on accounting terminology and the analysis and interpretation of accounting data. A course designed for those who need only a survey of accounting. Evening.

SECOND GROUP

101 *Cost Accounting (3)*

Study of the theory and purposes of industrial cost accounting; treatment of the systems of cost control and determination; and the analysis and interpretation of cost data. Prerequisite: Accounting 1-2. Evening. (Also offered 1953 summer term.)

Accounting 101x, same as 101, offered spring term. Morning.

111 *Financial Statement Analysis (3)*

Kennedy, Steele

Methods and techniques of preparing, analyzing, and interpreting financial statements for the guidance of operating executives, directors, stockholders, and creditors; determination and interpretation of trends

and ratios. Prerequisite: Accounting 1-2. Morning. (Also offered 1953 summer term.)

Accounting 111x, same as 111, offered spring term. Evening.

121-22 Intermediate Accounting (3-3)

Kurtz

Study of valuation and income determination problems; treatment of depreciation, funds, and reserves; accounting for the organization, financing, operation, and dissolution of partnerships and corporations. Prerequisite: Accounting 1-2. Prerequisite to 122: Accounting 121. Morning and evening sections. (Also offered 1953 summer term—Accounting 121 (3).)

131x Accounting Theory (3)

Kennedy

Study of the development of basic accounting principles and concepts with special reference to the current thought expressed by the American Institute of Accountants and the American Accounting Association. Prerequisite: six hours of accounting. Morning.

141 Governmental Accounting (3)

Lewis

Problems relating to governmental appropriation accounts, encumbrances, and fund accounting. Emphasis placed on municipal and state government accounting with an introduction to federal accounting. Prerequisite: Accounting 1-2 or permission of the instructor. Evening.

142 Federal Accounting (3)

Lewis

Accounting problems and reports of the Federal Government. Prerequisite: Accounting 141 or permission of the instructor. Evening.

151 Governmental Budgeting—Formulation and Adoption (3)

Buckler

Study of the development of budgetary theory and current techniques, procedures, and problems relating to the formulation and adoption of municipal, state, and federal government budgets. Evening.

152 Governmental Budgeting—Administration (3)

Buckler

Theory, practices, procedures, and problems involved in the evaluation and administration of budgeted programs for municipal, state, and federal governments. Prerequisite: Accounting 151 or permission of the instructor. Evening.

155 Business Budgeting (3)

Buckler, Brimacombe

Study of the principles, preparation, and administration of a business budget with emphasis on the importance of the budget to management. Prerequisite: Accounting 1-2. Morning. (Also offered 1953 summer term.)

Accounting 155x, same as 155, offered spring term. Evening.

161 Business Taxation (3)

Boyd, Bobys

A managerial approach to the impact of federal and state taxation upon the organization, reorganization, financing, and operation of business enterprises; difference between tax accounting and financial accounting; pension funds. Prerequisite: Accounting 1-2. Morning and evening sections.

162 Federal Tax Practice (3)

McLaughlin

The professional accountant's practice of federal taxation, including the income tax and estate and gift taxes; preparation of returns; assessment, collection, and refund procedures; use of the tax services. Prerequisite: Accounting 161 or permission of the instructor. Evening.

171x Auditing (3)

Kurtz

Study of the duties and responsibilities of the auditor; principles and procedures of making audits; the techniques of verifying each financial statement item, and the preparation of audit working papers and reports. Prerequisite: Accounting 121-22. Morning.

181 Accounting Systems (3)

Lewis

Theory and procedure of designing and installing accounting systems for collecting, recording, analyzing, and presenting accounting data. Prerequisite: Accounting 101, 122, and 171, or permission of the instructor. Evening.

191 Advanced Accounting (3)

Kurtz

Intensive study of consolidated statements, statement of affairs, realization and liquidation reports, and estate and trust accounting. Prerequisite: Accounting 121-22. Evening.

198 Professional Accounting Review (3)

Lewis

Review and coordination of the principles and techniques developed in the accounting curriculum, in preparation both for general practice in the field of accountancy and for professional accounting examinations. Prerequisite: Accounting 101, 141, 162, 171, and 191, or permission of the instructor. Evening.

THIRD GROUP

202 Advanced Cost Accounting (3)

Study of advanced cost accounting theory and problems with emphasis on development and analysis of standard costs, the use of cost data for managerial control, and distribution cost accounting. Prerequisite: Accounting 101 or permission of the instructor. Evening.

211x Managerial Accounting (3)

Buckler

Study of the accounting system with special reference to the use of financial and operating records as a tool of management; emphasis is placed on managerial internal accounting control, accounting reports, and the use of budgets and cost data in directing and controlling the business. Prerequisite: twelve hours of accounting or the permission of the instructor. Evening.

231 Contemporary Accounting Theory (3)

Kennedy

An intensive study of advanced accounting principles and concepts and of recent theories in connection with the valuation of assets and the determination of income. Prerequisite: eighteen hours of Accounting or permission of the instructor. Summer term 1953.

- 246 *Governmental Accounting and Budgeting Problems* (3) Lewis
Advanced principles and practices in federal accounting relationship to general policy and administration. Prerequisite: Accounting 142 and 152, or permission of the instructor. (Not offered in 1953-54.)
- 261 *Seminar in Federal Taxation* (3) McLaughlin
Specialized study planned as a guide to the preparation of briefs and reports in federal taxation, analyses of statutes, regulations, and leading cases. Prerequisite: Accounting 162 or permission of the instructor. Evening.
- 271X *Auditing Practice* (3) Bobys
Preparation of an audit report, accounting statements to be filed with Securities and Exchange Commission, current developments of auditing standards and practice. Prerequisite: Accounting 171 or permission of the instructor. Evening.
- 275 *Internal Control and Auditing* (3) Kennedy
Study of internal accounting controls; review and appraisal of accounting systems and procedures; study and evaluation of managerial policies with respect to their effectiveness and profitableness. Emphasis is placed upon the use of internal control and auditing as an aid to management. Prerequisite: Accounting 171 or permission of the instructor. (Not offered in 1953-54.)
- 295-96 *Seminar in Accounting* (3-3) Kennedy
Study, investigation, and discussion of selected accounting research topics and problems; individual oral and written reports. Admission by permission of the instructor. Evening.
- 299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1953 summer term.)

AIR SCIENCE AND TACTICS

Walter Grant Bryte, Jr., B.S., Colonel, United States Air Force, *Professor of Air Science and Tactics, Executive Officer*

Robert Kenyon Schubert, Major, United States Air Force, *Assistant Professor of Air Science and Tactics*

Robert Oliver Weyburn, Jr., B.S., Major, United States Air Force, *Assistant Professor of Air Science and Tactics*

William Robert Smith, B.B.A., Captain, United States Air Force, *Assistant Professor of Air Science and Tactics*

Francis Jerome Gleason, Master Sergeant, United States Air Force, *Instructor in Air Science and Tactics*

Frederick Raymond Risley, Master Sergeant, United States Air Force, *Instructor in Air Science and Tactics*

Clarence William Voth, Master Sergeant, United States Air Force, *Instructor in Air Science and Tactics*

Raymond Lloyd Hauck, Technical Sergeant, United States Air Force, *Instructor in Air Science and Tactics*

Training Certificate.—Upon the satisfactory completion of sixty credit hours of college work acceptable toward a Bachelor's degree and the satisfactory completion of the basic Air Force ROTC course of instruction, a training certificate will be awarded. Upon presentation of this certificate, eligible applicants may be accepted for enlistment in the Air Force Reserve in the grade of Airman 2d Class.

Commission in the United States Air Force Reserve.—Upon being awarded a Bachelor's degree and upon the satisfactory completion of the Air Force ROTC course of instruction prescribed by law and regulations, the graduate may be appointed Second Lieutenant, United States Air Force Reserve, if he is physically, mentally, morally, and professionally qualified.

FIRST GROUP

1-2 *Air Science I—Freshman Year (2-2)*

The Staff

Introduction to Air Force ROTC and aviation; fundamentals of global geography; international tensions and security organizations; instruments of national military security; drill and basic military training. Three hours a week. Morning and afternoon sections.

51-52 *Air Science II—Sophomore Year (2-2)*

The Staff

Elements of aerial warfare covering targets, weapons, aircraft, air ocean, bases, and forces; careers in the United States Air Force; and leadership laboratory covering cadet non-commissioned officer training. Prerequisite: Air Science 1-2 or equivalent active military training. Three hours a week. Morning and afternoon sections. (Also offered 1953 summer term—Air Science 51 (2).)

SECOND GROUP

- 101-2 *Air Science III—Junior Year (3-3)* The Staff
 The Air Force Commander and his Staff; problem solving techniques; the communications process and Air Force correspondence; military law, courts and boards; applied air science; Air Force base functions; and leadership laboratory covering cadet flight and squadron and group officer training. Prerequisite: Air Science 51-52 or equivalent active military training and selection by a board of University and Air Force officials. Five hours a week. Morning and afternoon sections.
- 103 *Summer Camp—Between Junior and Senior Years (required)* The Staff
 Attendance at a six-week Air Force ROTC summer camp at an active Air Force base within the continental United States is mandatory between the junior and senior years. The program consists of familiarization flying, physical training, individual weapons, Air Force base activity and equipment, field exercises, air base problems, and leadership training. Prerequisite: Air Science 101-2.
 Summer term 1953.
- 151-52 *Air Science IV—Senior Year (3-3)* The Staff
 Leadership seminar; career guidance; military aspects of world political geography; military aviation and the art of war; briefing for commission service; and leadership laboratory covering instruction of subordinates, planning and supervising drill, and other cadet corps activities. Prerequisite: Air Science 101-2 and Summer Camp (Air Science 103). Five hours a week. Morning.

ANATOMY

Claude Matthews McFall, LL.B., Ph.D., *Professor of Anatomy*
 Ira Rockwood Telford, Ph.D., *Professor of Anatomy, Executive Officer*
 Webb Edward Haymaker, M.S., M.D., *Professorial Lecturer in Anatomy*

*Paul Calabrisi, A.M., *Associate Professor of Anatomy*
 Ivor Cornman, Ph.D., *Assistant Research Professor of Anatomy*
 Wilfred Walter Eastman, B.S., M.D., *Clinical Instructor in Anatomy*
 Alan Andrews Dun, A.B., M.D., *Clinical Instructor in Anatomy*

Master of Science in the field of Anatomy (Columbia College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree from this University, or the equivalent, with a major in Biology, Chemistry, or Zoology. The undergraduate program must include the following courses, or the equivalent: Chemistry 11-12, 21, 151-52; Physics 6, 7; Zoology 1-2, 41-42. Biochemistry 221-22 is recommended as an elective.

Required: thirty credit hours of graduate work including Anatomy 201-2, 295-96, 299-300, and graduate courses in biochemistry, physiology, and related fields selected with the approval of the Department; a grade of B or better in course examinations; and the passing of a comprehensive oral examination at the end of the year. It is not always possible to arrange courses and research so that the student can be assured of completing all the required work in one academic year.

101-2 *Gross Anatomy*

McFall, Telford, and Staff

Regional dissection of the human body supplemented with lectures and quiz sections. Study of X-ray anatomy to emphasize the functional aspects of the position, shape, and relation of the viscera and skeletal components. Eighteen hours a week, fall term; nine hours a week, spring term.

103 *Human Embryology*

McFall and Staff

The origin and development of the human body. Special emphasis on the value of embryology in interpreting anatomical anomalies and variations as seen in gross dissection, surgery, obstetrics, and pathology. Three hours a week.

105 *Neuro-anatomy*

Haymaker and Staff

The macroscopic and microscopic study of the central nervous system and the special sense organs. Emphasis on such dynamic aspects as development, pathways, lesions, etc. Six hours a week.

106 *Microscopic Anatomy*

Telford and Staff

Study of the detailed minute structure of cells, tissues, and organs of the human body with emphasis on the relation of structure to function. Recognition and interpretation of histological sections tested by practical examinations. Six hours a week.

* On leave of absence 1953-54.

201-2 *Seminar (1-1)*

Reports and discussions of special topics by the Staff and graduate students. For graduate liberal arts students. Regular medical students are encouraged to attend. One hour a week.

Telford and Staff

295-96 *Research (arr.)*

Time, credits, and fees to be arranged.

Telford and Staff

299-300 *Thesis (3-3)*

The Staff

ANESTHESIOLOGY

Charles Seymour Coakley, M.D., *Professor of Anesthesiology, Executive Officer*

Donald Harrison Stubbs, A.M., M.D., *Clinical Professor of Anesthesiology*

Seymour Alpert, A.B., M.D., *Associate Professor of Anesthesiology*

William Albert Spencer, A.B., M.D., *Instructor in Anesthesiology*

William Eldridge Bageant, M.D., *Clinical Instructor in Anesthesiology*

Allen Widome, M.D., *Clinical Instructor in Anesthesiology*

320 *Anesthesiology*

The Staff

Review of basic sciences, correlation between basic sciences and clinical work. One hour a week. Third-year students.

351-52 *Anesthesia Seminar*

The Staff

Fourth-year students attend anesthesia seminars during their surgical clinical clerkships at the University Hospital. One hour a week.

433-34 *Advanced Anesthesiology*

The Staff

Fourth-year students are rotated through the work of the department for a period of one week and assigned to work in the operating rooms and to attend conferences and seminars. For the more advanced students a three-week elective is offered.

ART

*Norris Ingersoll Crandall, M.Arch., *Professor of Art*
Donald Chenoweth Kline, B.Arch., M.F.A., *Professor of Art, Executive Officer*

STAFF IN THE CORCORAN SCHOOL OF ART

DRAWING AND PAINTING: Richard Lahey, *Principal*; Eugen Weisz, *Vice Principal*; Edmund Archer, Jessalee Sickman, Kenneth Stubbs, Omar Carrington

SCULPTURE AND CARVING: Heinz Warneke

COMMERCIAL ART: Joseph Ross, Leslie Mitchell

Bachelor of Arts (Columbian College—Departmental):

The major in Art Appreciation.—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Electives must include Art 11-12 and 71-72. Required: Art 121-22, 151-52, 161-62, and two of the following: 101-2, 131-32, 141-42, 143, 146.

The major in Drawing and Painting.—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Electives must include Art 11-12. Required: Art 121-22 and at least thirty credit hours of drawing and painting. Classes in drawing and painting are held at the Corcoran School of Art.

Bachelor of Arts in Education with a teaching field in Art (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the Art option, pages 149-50, and professional courses listed on pages 155-56.

FIRST GROUP

11-12 *Art Appreciation* (3-3)

Meaning of art in historic periods. Criticisms of works from prehistoric times to present. Symbolology of lines, lightvalues, color, composition, form. (Not offered in 1953-54.)

Crandall

65-66 *Drawing and Painting—Life, Still Life, and Portrait* (3-3)

For beginners. Afternoon.

The Staff

67-68 *Drawing and Painting—Life and Portrait* (6-6)

For beginners. Morning, afternoon, and evening sections.

Archer, Stubbs

71-72 *Introduction to the Arts in America* (3-3)

Painting, sculpture, architecture, furniture, and popular arts. Morning and evening sections. (Also offered 1953 summer term.)

Kline

75-76 *Drawing and Painting—Life, Still Life, and Portrait* (3-3)

Afternoon.

The Staff

* On sabbatical leave fall term 1953-54.

- 77-78 *Drawing and Painting—Life, Still Life, and Portrait* (6-6) Sickman, Carrington
Morning, afternoon, and evening sections.

SECOND GROUP

- 101-2 *The Design of the Home* (3-3) Crandall
The home: history, personality, location, cost, financing, maintenance, structure, light, and color. 1953-54 and alternate years, morning. 1954-55 and alternate years, evening.
- 121-22 *World History of Art* (3-3) Kline
The fine arts from ancient times to the nineteenth century. Prerequisite: Art 11-12 or the equivalent. 1953-54 and alternate years, evening. 1954-55 and alternate years, afternoon.
- 131-32 *Greek and Roman Art and Archaeology* (3-3) Latimer
History, development, significance of the arts of Greece and Rome, and their meaning for the world today. Illustrated lectures combined with class discussions and reports. (Not offered in 1953-54.)
- 141-42 *Interior Decoration* (3-3) Kline
Practical problems in the selection and use of furniture, wall and floor coverings, draperies, and lighting. Afternoon.
- 143 *Folk Arts of America* (3) Kline
Woodcarving, painting, ceramics, glass, furniture, and music. 1953-54 and alternate years, afternoon. 1954-55 and alternate years, evening.
- 146 *Art of the Far East* (3) Kline
The architecture, painting, and sculpture of China and Japan. 1953-54 and alternate years, afternoon. 1954-55 and alternate years, evening.
- 151-52 *Modern Art* (3-3) Crandall
Neo-classicism, romanticism, impressionism, expressionism, cubism, and abstract works in terms of structure and form. Prerequisite: Art 11-12 or the equivalent. 1953-54 and alternate years, evening. 1954-55 and alternate years, afternoon.
- 161-62 *History of Art Criticism* (3-3) Crandall
A survey of art criticism from ancient Greece to the present. Admission by permission of the instructor. 1953-54 and alternate years, afternoon. 1954-55 and alternate years, evening.
- 165-66 *Drawing and Painting—Life and Portrait* (6-6) Lahey, Weisz
Morning, afternoon, and evening sections.
- 175-76 *Drawing and Painting—Life and Portrait* (6-6) Weisz
Afternoon.
- 177 *Still Life and Landscape* (3) Weisz
Drawing and painting in all mediums.
Summer term 1953.

- 178x *Figure, Still Life, and Composition* (3)
Drawing and painting in all mediums. Classes conducted indoors.
Summer term 1953.
- 179-80 *Sculpture* (6-6) Warneke
Portrait-life modeling and composition in clay, plaster and wood carving. Afternoon and evening sections.
- 183-84 *Design and Commercial Art* (6-6) Ross, Mitchell
Prerequisite: Art 78 or the equivalent. Afternoon and evening sections.
- 185-86 *Advanced Commercial Art* (arr.)
(Not offered in 1953-54.)

BACTERIOLOGY, HYGIENE, AND PREVENTIVE MEDICINE

Leland Wilbur Parr, Ph.D., *Professor of Bacteriology, Executive Officer*
Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
Ralph Gregory Beachley, M.D., Dr.P.H., *Adjunct Professor of Public
Health Practice*
Mary Louise Robbins, Ph.D., *Associate Professor of Bacteriology*
William Gray McCarten, M.S., *Instructor in Bacteriology*

SEMINAR LECTURERS

Chester Wilson Emmons, Ph.D., *Professorial Lecturer on Medical My-
cology*
Willard Hull Wright, D.V.M., Ph.D., *Professorial Lecturer on Medical
Zoology*
John Roderick Heller, Jr., B.S., M.D., *Professorial Lecturer on Cancer
Control*
Carl John Lauter, M.S., *Professorial Lecturer on Municipal Sanitation*
Robert Carter Cook, *Professorial Lecturer on Medical Genetics*
Robert Hanna Felix, M.D., M.P.H., *Professorial Lecturer on Mental
Hygiene*
Francis Byron Gordon, Ph.D., M.D., *Professorial Lecturer on Virology*
Edward Kramer Funkhouser, B.S., *Professorial Lecturer on Community
Health Resources*
Samuel Jacob Ajl, Ph.D., *Professorial Lecturer on Microbiological
Chemistry*
Sarah Bishop Brooks, R.N., B.S. in P.H.N., *Professorial Lecturer on
Public Health*

*Master of Arts or Master of Science in the field of Bacteriology (Columbia
College).—Prerequisite: a Bachelor of Arts or a Bachelor of Science degree, re-
spectively, from this University, or the equivalent, with a major in Biology,
Botany, Chemistry, or Zoology. The undergraduate program must include the
following courses or the equivalent: Chemistry 11-12, 21, 151-52; Physics 6, 7;
Zoology 1-2, 41-42.*

Required: thirty credit hours, including Bacteriology 209, 210, 293-94, 295-96,
299-300. The remaining courses are to be selected from Bacteriology 219-20,
229, 230, 232, 240 and Biochemistry 221-22 (if not presented for admission).
The student with much bacteriological background may substitute for credit one
course from the following: cytology, genetics, cell physiology, entomology, histol-
ogy, biostatistics, and protozoa. It is not always possible to arrange courses and
research so that the student can be assured of completing all required work in
one academic year.

112 General Bacteriology (4)

Robbins

For nonmedical students. A study of the fundamentals of bacteriology, including hygienic applications. Methods of cultivation and control of several groups of microorganisms are studied in the laboratory. Prerequisite: any biological laboratory science; Chemistry 11-12. Laboratory fee, \$9. Tues., Thurs., and Sat., 9:10 to 12:00 A.M.

209 Medical Microbiology (1-11)

Parr, Griffin

Bacteria, rickettsia, viruses, yeasts, molds, protozoa, and metazoa which relate to the health and diseases of man—cultural study of most important forms; methods of diagnosis by microscopic, cultural, immunologic, and animal reactions; theory and methods of immunology; vaccines; serums; antibiotics. Open to suitably prepared graduate students; may be elected as a whole or in part by adding the appropriate letter to the course number, with credit allocated as follows: (a) *Bacteriology*, including rickettsia and viruses—lecture (4), laboratory (3); (b) *Parasitology*, including medical mycology—lecture (2), laboratory (1); (c) *Immunology* (1). May be taken by a limited number of candidates for Master's degrees. Laboratory fee, \$3 for each credit hour of laboratory work. Time to be arranged.

210 Fundamentals of Epidemiology and Public Health (2)

Parr and Staff

Sources, modes, and implications of infection and injury. Consideration also given the problems of accidents and industrial medicine. Open to liberal arts graduate students. Prerequisite: Bacteriology 112 or 209. Mon., 2:00 to 4:00 P.M.

219-20 Advanced Microbiology (arr.)

Griffin and Staff

Special study of advanced methods and current problems in microbiology for suitably qualified students specializing in microbiology. Prerequisite: Bacteriology 112 or 209; Chemistry 151-52 or the equivalent; permission of the instructor. Laboratory fee, \$3 a credit hour. Time and credits to be arranged.

229 Virus Techniques (6)

Robbins

Principal cultural and serological methods used in the study of viruses and rickettsiae. For liberal arts graduate students. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Laboratory fee, \$10. 1954-55 and alternate years.

230 Statistics in Microbiology (3)

Griffin

The application of statistical methods to the problems of microbiology. For liberal arts graduate students. Prerequisite: entrance or elementary college algebra. 1953-54 and alternate years, time to be arranged.

232 Immunological Methods (3)

Griffin

Preparation and testing of serological materials. Demonstration of basic serological phenomena. For liberal arts graduate students. Prerequisite: Bacteriology 112 or 209 and permission of the instructor. Laboratory fee, \$6. 1954-55 and alternate years.

240 Advanced Epidemiology and Public Health (3)

Parr

Conferences, readings, and problems for graduate students dealing with specialized and advanced phases of the topics presented in Bacteriology.

teriology 210. Prerequisite: Bacteriology 210. 1953-54 and alternate years, time to be arranged.

293-94 *Staff Seminar (1-1)* The Staff

For liberal arts graduate students. Bi-weekly throughout the year. Time to be arranged.

295-96 *Research in Bacteriology (arr.)* The Staff

Time and credits to be arranged.

299-300 *Thesis (3-3)* The Staff

340 *Health Resources Survey* Beachley and Staff

A survey of complete medical care from first contact, through laboratory and clinical diagnosis, adequate medical or surgical treatment to full family and community rehabilitation. Case histories assigned junior students with the cooperation and assistance of the clinical departments. Comparison is to be made between care in near-ideal facilities and care in facilities where the student might begin his practice. Emphasis is on coordination of the private practice of medicine and community public health and welfare activities, both tax supported and voluntary. Throughout the holistic point of view is assumed. One hour a week for three weeks and independent research during summer.

401 *Public Health Practice* Beachley

Study of public health practice at national, state, city, and county levels. Public and private agencies. One hour a week for eight weeks.

BIOCHEMISTRY

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry, Executive Officer*
 Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
 William Henry Sebrell, Jr., M.D., *Professorial Lecturer on Nutrition*
 George Washington Irving, Jr., Ph.D., *Professorial Lecturer on Proteins*
 Bernard Leonard Horecker, Ph.D., *Professorial Lecturer on Enzymes*
 Benjamin Williams Smith, Ph.D., *Assistant Professor of Biochemistry*
 Robert Clayton, Ph.D., *Assistant Professor of Biochemistry*
 Klaus Schwarz, M.D., *Associate in Biochemistry*
 Harold William Clark, Jr., Ph.D., *Associate in Biochemistry*

Master of Arts or Master of Science in the field of Biochemistry (Columbia College).—Prerequisite: a Bachelor of Arts or a Bachelor of Science degree. The undergraduate program must have included the following courses, or the equivalent: Chemistry 11-12, 21, 22, 151-52; Physics 6 and 7; Zoology 1-2 or Biology 1-2.

Required: thirty credit hours including Biochemistry 221-22, 225, 226, 227-28, 299-300. The remaining courses are to be selected from Biochemistry 231, 251, 261, 295-96, 404, or, with the approval of the adviser, from graduate courses in Bacteriology, Chemistry, Physiology, or Pharmacology. It is usually not possible to arrange courses and research so that the student can be assured of completing all of the required work in one academic year.

113-14 *Biochemistry*

Roe and Staff

Physiological and clinical chemistry for the first-year medical student. Two lectures, one conference hour, and two three-hour laboratory periods a week.

221-22 *Biochemistry (4-4)*

Treadwell

A lecture and laboratory course for nonmedical students. Prerequisite: Chemistry 22 and 152. Material fee, \$12 a term. Tues. and Thurs., 9:00 to 12:00 A.M. and 1:00 to 2:00 P.M.

224 *Biochemistry of the Enzymes (1)*

Horecker

Lecture course dealing with the biochemistry of the enzymes and enzyme reactions. Prerequisite: Biochemistry 113 or 221. Mon., 5:00 P.M.

225 *Biochemical Preparations (3)*

The Staff

For liberal arts graduate students. Material fee, \$12. Time to be arranged.

226 *Biochemical Laboratory Methods (3)*

The Staff

For liberal arts graduate students. Material fee, \$12. Time to be arranged.

227-28 *Biochemistry Seminar (1-1)*

Roe

The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students. Fri., 4:00 P.M.

- 231 *Proteins and Amino Acids* (1) Irving
A lecture course for liberal arts graduate students. Prerequisite: Biochemistry 114 or 222. 1953-54 and alternate years, Mon., 5:00 P.M.
- 251 *Carbohydrate Metabolism* (1) Roe
A lecture course. Prerequisite: Biochemistry 114 or 222. 1954-55 and alternate years, Sat., 9:00 A.M.
- 261 *Biochemistry of the Lipids* (1) Treadwell
A lecture course. Prerequisite: Biochemistry 114 or 222. 1953-54 and alternate years, Sat., 9:00 A.M.
- 295-96 *Research in Biochemistry* (arr.) Roe, Treadwell
Time and credits to be arranged.
- 299-300 *Thesis* (3-3) Roe, Treadwell
- 404 *Applied Nutrition* (1) Sebrell
For senior medical students and graduate students. Lecture course upon dietary requirements, deficiency diseases, and therapeutic diets. Prerequisite: Biochemistry 113 or 221, Sat., 9:00 A.M.

BIOLOGY *

Paul William Bowman, Ph.D., *Professor of Biology, Executive Officer*
 Sam Clark Munson, Ph.D., *Associate Professor of Biology*
 Robert Carter Cook, *Lecturer on Genetics*

Bachelor of Arts or Bachelor of Science with a major in Biology (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60-61. Required: the general requirements as stated on pages 75-80 and the grade of "pass" on the Biology major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the classification and life histories of plants and animals, ecology, geology, evolution, heredity, the physical and cultural development of man, public health problems, and the history of biology. The course offerings will be correlated and supplemented by supervised study in a proseminar. For further details, see the pamphlet, which is available at the Office of the Dean of Columbian College.

Master of Arts or Master of Science in the field of Biology (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively, with a major in Biology at this University, or the equivalent. Required: the general requirements as stated on pages 81-84.

Bachelor of Arts in Education with a teaching field in Biology (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the Biology option, page 150, and the professional courses listed on pages 155-56.

FIRST GROUP

1-2 *Survey in Biology (3-3)*

Munson

Systematic study of the plant and animal kingdoms, with emphasis upon the interdependence of living things and their relations with their environments. Introduction to evolution, heredity, public health, and conservation. Material fee, \$5 a term. Lecture (1 hour)—afternoon and evening sections; laboratory (2 hours)—morning, afternoon, and evening sections; field trip to nearby countryside and to museums and other places of biological interest (3 hours)—morning and afternoon sections. (Also offered 1953 summer term.)

SECOND GROUP

115-16 *Cytology (3-3)*

Bowman

Study of plant and animal cells and their components, including the chromosomes and their role in heredity, with training in the preparation of materials for study. Prerequisite: one year of college work in biology, botany, or zoology. Material fee, \$6 a term. Lecture (1 hour); recitation (1 hour); laboratory (3 hours)—evening.

127 *Genetics (3)*

Cook

A lecture course in which the general principles are illustrated with specific examples of inheritance in plants and animals, including man. Prerequisite: one year of college work in biology, botany, or zoology. Evening.

* See also departments of Botany and Zoology.

139 Cell Physiology (3)

Yocum

The fundamental physiology of protoplasm. Prerequisite: Chemistry 12 and one year of college biology, botany, or zoology. (Not offered in 1953-54.)

146 Environmental Measurements (3)

Cantlon

Studies in the problems encountered in measuring various environmental factors in terrestrial and aquatic habitats. Emphasis will be placed upon techniques, but the practical applications of environmental measurements will be discussed as the work progresses. Prerequisite: Biology 1, Botany 1, or Zoology 1. (Not offered in 1953-54.)

199-200 Proseminar in Biology (3-3)

Bowman

Individually planned and directed study by means of which majors in biology may correlate and supplement the subject matter presented in various regular courses. Morning.

THIRD GROUP

201-2 Seminar: Cytology (3-3)

Bowman

Evening.

211-12 Research in Cytology (arr.)

Bowman

Time and credits to be arranged. (Also offered 1953 summer term—Biology 211.)

299-300 Thesis (3-3)

Bowman

Time to be arranged. (Also offered 1953 summer term—Biology 299 (3).)

BOTANY *

Lawson Edwin Yocum, Ph.D., *Professor of Botany, Executive Officer*
 William Webster Diehl, Ph.D., *Adjunct Professor of Mycology*
 Lyman Bradford Smith, Ph.D., *Professorial Lecturer on Taxonomy*
 ‡John Edward Cantlon, Ph.D., *Associate Professor of Botany*

Bachelor of Arts or Bachelor of Science with a major in Botany (Columbia College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60-61. Required: in addition to the general requirements as stated on pages 75-80, a minimum of twenty-four credit hours in Botany beyond the introductory courses, with collaterals as recommended in conference.

Master of Arts or Master of Science in the field of Botany (Columbia College).—Prerequisite: the equivalent of a Bachelor of Arts or Bachelor of Science degree, respectively, from this University with a major in Botany. Required: the general requirements as stated on pages 81-84.

FIRST GROUP

1 *Structure and Functions of the Flowering Plant* § (3)

Yocum, _____

The typical plant as a working mechanism, with the emphasis on the general biological significance of plant physiology. Material fee, \$5; Lecture (2 hours); laboratory (2 hours)—morning, afternoon, and evening sections. (Also offered 1953 summer term.)

Botany IX, same as I, offered spring term. Lecture—morning; laboratory—afternoon.

2 *Survey of the Plant Kingdom* (3)

Yocum, _____

Study of the different kinds of plants, with emphasis on the evolution of the plant kingdom; practice in identifying flowering plants. Material fee, \$5. Lecture (2 hours); laboratory (2 hours)—morning, afternoon, and evening sections. (Also offered 1953 summer term.)

SECOND GROUP

105 *Field Botany* (3)

Cantlon

Field trips to neighboring localities of botanical interest, with classroom study. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture (2 hours); laboratory (4 hours); field trips (3 hours). 1954 and alternate summer terms.

107 *Algae, Fungi, and Mosses* (3)

Field and laboratory study of the habitat, structure, and identification of representative local forms of algae, fungi, and mosses. Prerequisite: Botany 1 and 2 or Biology 1-2. (Not offered in 1953-54.)

* See also the departments of Biology and Zoology.

‡ On leave of absence 1953-54.

§ Before completing registration for Botany 1, each student must obtain from the representative of the Department an assignment to a laboratory section.

- 109 *Plant Morphology* (3) Yocum
Survey of structure of root, stem, leaf, and flower of seed plants; followed by the application to several of the economically important families. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture (2 hours); laboratory (2 hours). 1954-55 and alternate years, afternoon.
- 116 *Plant Growth* (3) Yocum
The functions of plants with special emphasis on the practical problems of growing and of caring for plants. Prerequisite: Botany 1 and 2 or Biology 1-2. Lecture (2 hours); laboratory (2 hours). 1954-55 and alternate years.
- 118x *Physiology of Bacteria and Fungi* (3) Yocum
Lectures, literature reviews, and laboratory studies of the physiology of bacteria and fungi. Prerequisite: Botany 1 and 2 or Biology 1-2. 1954-55 and alternate years.
- 125-26 *Plant Taxonomy* (3-3) Cantlon
A study of the characteristics, phylogeny, and economics of selected families of the flowering plants. Field collection and identification. Prerequisite: Botany 1 and 2 or Biology 1-2. Material fee, \$5. Lecture (1 hour); laboratory and field (4 hours). (Not offered in 1953-54.)
- 131-32 *Mycology* (3-3) Diehl
Lecture (1 hour); laboratory (4 hours). 1953-54 and alternate years, evening.
- 133-34 *Plant Pathology* (3-3) Diehl
Material fee, \$6 a term. 1954-55 and alternate years, evening.
- 135-36 *Plant Physiology* (3-3) Yocum
Fall term: mineral and water relations of plants; spring term: organic syntheses and growth. Prerequisite: Chemistry 11-12. Material fee, \$6 a term. 1953-54 and alternate years, evening.
- 138 *Growth Regulators* (3) Yocum
Lectures, literature reviews, and laboratory studies of the physiology of growth regulators and their functions in plants and animals. Prerequisite: Botany 1 and 2 or Biology 1-2. 1954-55 and alternate years.
- 141-42 *Plant Ecology* (3-3) Cantlon
Lecture (2 hours); laboratory (2 hours). (Not offered in 1953-54.)
- 143 *Introduction to Plant Geography* (3) Cantlon
A study of the basic principles and methods of plant geography. Prerequisite: Botany 1 and 2 or Biology 1-2. 1954-55 and alternate years.
- 144 *The Vegetation of North America* (3) Cantlon
Lectures, seminars, and laboratory on the characteristic vegetations of North America with emphasis on the United States. Prerequisite: Botany 1 and 2 or Biology 1-2. 1954-55 and alternate years.

THIRD GROUP

- | | | |
|---------|---|-----------|
| 221-22 | <i>Seminar: Taxonomy</i> (3-3)
(Not offered in 1953-54.) | Smith |
| 235-36 | <i>Seminar: Physiology</i> (3-3)
1954-55 and alternate years. Time to be arranged. | Yocum |
| 241-42 | <i>Seminar: Ecology</i> (3-3)
(Not offered in 1953-54.) | Cantlon |
| 295-96 | <i>Research</i> (arr.)
Time, credits, and fees to be arranged. (Also offered 1953 summer term—Botany 295 (3).) | The Staff |
| 299-300 | <i>Thesis</i> (3-3)
Time to be arranged. (Also offered 1953 summer term—Botany 299 (1).) | The Staff |

BUSINESS ADMINISTRATION

*Richard Norman Owens, Ph.D., C.P.A., *Professor of Business Administration*

Harold Griffith Sutton, M.S., *Professor of Finance*

Joe Lee Jessup, M.B.A., *Professor of Business Administration*

James Carlton Dockeray, Ph.D., *Professorial Lecturer in Business Administration*

Montell Ernest Ogdon, Ph.D., *Professorial Lecturer in Business Administration*

Alfred Ernest Lampe, B.S., C.P.C.U., *Professorial Lecturer on Insurance*

Joseph Leo Krieger, M.B.A., *Professorial Lecturer in Business Administration*

Carl William Clewlow, A.M., *Professorial Lecturer in Business Administration*

Eugene Fields, B.S., C.P.C.U., *Professorial Lecturer on Insurance*

Roger James Browne, B.S., Major General, United States Air Force, *Professorial Lecturer in Business Administration*

Merle Talmadge Welshans, Ph.D., *Associate Professor of Business Administration, Executive Officer*

Gordon Barnewall, M.B.A., *Assistant Professor of Business Administration*

Sherman Cohen, A.B., LL.B., LL.M., *Lecturer in Business Administration*

Joseph Patrick Murphy, A.B., LL.B., LL.M., *Lecturer on Insurance*

Augustus Clark Johnson, A.M., *Lecturer in Business Administration*

Bachelor of Arts in Government with a major in Business Administration (School of Government).—For curricula see pages 167-68.

Master of Business Administration (School of Government).—Prerequisite: an acceptable undergraduate major in Business Administration or the equivalent. Required: the general requirements for the degree as stated on page 175.

Doctor of Business Administration (School of Government).—Prerequisite: a Master's degree in Business Administration or a related field, or the equivalent, and proficiency in Statistics and Accounting to the satisfaction of the Committee on Doctoral Studies. Required: thirty credit hours of graduate work beyond the Master's level, the passing of a general examination in six fields, and the writing and defending of a dissertation.

Bachelor of Science in Engineering with an option in Business Administration (School of Engineering).—See pages 124-26, 129-30.

Bachelor of Arts in Education with teaching fields in Business Education (School of Education).—Prerequisite: the Education curriculum page 62. Required: the Business Education option, pages 150-51, and the professional courses listed on pages 155-56.

* On sabbatical leave fall term 1951-54

SECOND GROUP

- 101 *Business Organization and Combination* (3) _____
Simple and interrelated forms of business enterprise and their control by government. Morning and evening sections. (Also offered 1953 summer term.)
- 102 *Business Management* (3) Owens, Clewlow
The management movement, organization of an enterprise, principles of management and their application to various departments of an enterprise. Morning and evening sections.
- 105 *Personnel Management in Industry* (3) Barnewall
Organization and work of the personnel department, human relations in business. Morning. (Also offered 1953 summer term.)
Business Administration 105x, same as 105, offered spring term.
Evening.
- 106 *Problems in Personnel Management* (3) Owens
Principles of human relations illustrated by cases drawn from business and industry. Prerequisite: Business Administration 105. Evening.
- 109 *Office Management* (3) Johnson
Organization and layout of an office, use of office machines and appliances, planning and execution of work, supervision problems. Evening. (Also offered 1953 summer term.)
Business Administration 109x, same as 109, offered spring term.
Evening.
- 113x *Real Estate* (3) Welshans
Fundamentals of real estate practice; leasing and property management; valuation, financing, and taxation. Evening.
- 116 *Urban Transportation* (3)
Local transportation in economic development; regulation, finance, operation, and management of transit services; community planning for streets, highways, parking, and traffic control. (Not offered in 1953-54.)
- 121 *General Insurance* (3) Cohen
A general course in underlying principles of property, life, marine, and casualty insurance, and the function of insurance in the economic life of a business or individual. Prerequisite: Economics 1-2. Morning.
- 123-24 *Property and Casualty Insurance* Fields
A and B (2-2)
The principles and practices of property and casualty insurance with emphasis on the economics of insurance, types of carriers, contract provisions, agency and brokerage, and state regulation and supervision. Prerequisite: Business Administration 121. (Not offered in 1953-54.)
- 125-26 *Property and Casualty Insurance* Lampe
C and D (2-2)
The principles and practices of property and casualty insurance with emphasis on theory of probability, rates and rating, reserves, financial

statements, and investments; loss adjustment and loss prevention.
Prerequisite: Business Administration 123-24. Evening.

127-28 *Property and Casualty Insurance*
E and F (2-2)

Principles of accounting; principles of business and personal finance; business organization and agency management. Evening.

129-30 *Property and Casualty Insurance*
G and H (2-2)

Murphy

Insurance law with particular attention given to construction of insurance contracts, and general commercial law as it relates to contracts, agencies, partnerships, corporations, personal property, real estate and mortgages, negotiable instruments, bankruptcy, bailments, common and private carriers, and negligence. (Not offered in 1953-54.)

131 *Business Finance (3)*

Welshans

Basic principles involved in the financing of business enterprises. Prerequisite: Accounting 1-2. Evening. (Also offered 1953 summer term.)

Business Administration 131x, same as 131, offered spring term. Morning.

136 *Commercial Credit (3)*

Types and sources of credit information, credit relationships from the standpoint of the commercial bank and the commercial business enterprise. Prerequisite: Accounting 1-2. (Not offered 1953-54.)

138x *Investments (3)*

Welshans

Analysis of factors of investment credit with application to different types of investments, proper selection of investments for various classes of investors, regulation. Prerequisite: Accounting 1-2. Evening. (Also offered 1953 summer term.)

141 *Principles of Marketing (3)*

A survey of marketing, giving particular attention to consumption, retailing, wholesaling, and sales management; the entire marketing structure and its relation to the total economy. Prerequisite: Economics 1-2. Evening. (Also offered 1953 summer term.)

Business Administration 141x, same as 141, offered spring term. Morning.

142 *Marketing Problems (3)*

Barnewall

Marketing principles applied to specific distribution policy and operating problems of retailers, wholesalers, and manufacturers handling consumer and industrial goods. Prerequisite: Business Administration 141. (Not offered in 1953-54.)

143x *Marketing Research (3)*

Barnewall

Study of market research methods and techniques; sources of data; the use of market research in business operations. Evening.

145 *Sales Management (3)*

Barnewall

Organization of the sales department, sales planning and forecasting, quotas, territories, performance standards, and analysis and control

- of distribution costs. Prerequisite: Business Administration 141. Evening.
- 146 *Sales Management Problems* (3) Jessup
Problems of marketing executives with respect to planning sales programs, territories, and salesmen's quotas; selection, training, and supervision of sales force. Prerequisite: Business Administration 145. Morning.
- 147 *Advertising* (3) Barnewall
Advertising as a function of marketing and merchandising; evaluation, purchase, criticism, and control of advertising; uses and limitations of advertising as a tool of management. Summer term 1953.
- 148 *Wholesaling* (3) Barnewall
The wholesale function; organization and types; economics of wholesale authorities. (Not offered in 1953-54.)
- 150x *Principles of Purchasing* (3) Barnewall
Organization for purchasing, purchasing policies, market relationships, selection of merchandise, purchasing information and records. Evening.
- 151x *Retailing* (3) Barnewall
Principles and problems in retail merchandising, including markup, inventory valuation, and expense control; service and personnel problems. Morning.
- 158 *Traffic Management* (3)
Organization and records of traffic department, routing of shipments, services by carriers, rates and charges, relation of shipper to transportation agencies. (Not offered in 1953-54.)
- 175 *Introduction to Foreign Trade* (3) Ogdon
Terminology, trade usages and practices, conditions essential to successful trading, economic bases of international trade, obstacles to trade, tariffs, impact of governmental controls on private trade. Prerequisite: Economics 1-2. Evening.
- 176 *Exporting and Importing* (3) Ogdon
Policy and operating questions of foreign trade, financing and documentation of shipments. Prerequisite: Business Administration 175. Evening.
- 178 *Foreign Markets* (3) Ogdon
Pattern of world trade by countries and commodities, methods of preparing market surveys, selected regional market analyses. Prerequisite: Economics 1-2. (Not offered in 1953-54.)
- 191 *Business Reports and Analyses* (3) Dockeray
Research in specific business problems and reports for management use. Open to seniors. (Not offered in 1953-54.)

- 195 *Controllershship* (3) Jessup
The duties, responsibilities, and place of the controller in a business organization; relations of controller to other departments and regulatory bodies; and the controller's relation to price setting and inventories, depreciation policies, internal auditing, expense control and budgeting, and financial reports to management, stockholders, and employees. Prerequisite: Accounting 1-2. Open to seniors. Evening.

- 198 *Problems in Business Management* (3) Jessup
Principles and methods of management illustrated by cases drawn from business and industry. Prerequisite: Business Administration 102. Open to seniors. Morning. (Also offered 1953 summer term.)
Business Administration 198x, same as 198, offered fall term. Evening.

THIRD GROUP

- 231 *Corporate Financial Problems* (3) Welshans
Financial practice in promotion, consolidation, and mergers; capital structure adjustments; and reorganization. Evening.
- 232 *Seminar in Business Finance* (3) Welshans
Research in advanced financial problems. Evening. (Also offered 1953 summer term.)
- 241-42 *Seminar in Marketing* (3-3) Barnewall
Research and reports on marketing problems. Evening.
- 268 *Management Engineering* (3) Clewlow
Analysis of the techniques for initiation and implementation of management engineering programs, with emphasis on organization and methods surveys, including the study of work measurement, work simplification, management audits, and other management improvement programs. (Not offered in 1953-54.)
- 273-74 *Readings in Business* (3-3) The Staff
Advanced readings in the fields of finance, marketing, and personnel management. (Not offered in 1953-54.)
- 278 *The Dynamics of Business* (3)
An analysis of the structure of American business, including a study of trend and cyclical change in economic activity and their bearing upon governmental policy. (Not offered in 1953-54.)
- 286x *Management in the Armed Forces* (3) Browne
Special problems of military organization and management; applicability of business management techniques to the armed forces. Evening.
- 291-92 *Seminar in Business Management* (3-3) Dockeraay
Research on various phases of management, including business, industrial, and personnel management. Evening. (Also offered 1953 summer term.)
- 293-94 *Business Research* (3-3) The Staff
(Not offered in 1953-54.)

- 295 *Controllershship in the Federal Service* (3) Krieger
Function of the controller in federal agencies; special problems analyzed; controller function in government and business. Evening.
- 296 *Seminar in Controllershship* (3) Krieger
Research on advanced problems of the controller in all types of business organization and the Federal Government. Evening. (Also offered 1953 summer term.)
- 297-98 *Business Policy* (3-3) Jessup
Problems of management are analyzed with the view of developing a practical solution; cases are used to show the problems of personnel in marketing, industrial management, finance, etc. Evening.
- 299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1953 summer term—Business Administration 299 (3).)

CHEMISTRY

Benjamin Douglass Van Evera, Ph.D., Sc.D., *Professor of Chemistry*

Samuel Nathaniel Wrenn, Ph.D., *Professor of Chemistry*

*Charles Rudolph Naeser, Ph.D., *Professor of Chemistry*

Robert Corbin Vincent, Ph.D., *Associate Professor of Chemistry, Acting*

Executive Officer

Reuben Esselstyn Wood, Ph.D., *Associate Professor of Chemistry*

William Frederick Sager, Ph.D., *Associate Professor of Chemistry*

James Willard Harkness, B.S., Ed.M., *Assistant Professor of Chemistry*

Theodore Peter Perros, Ph.D., *Assistant Professor of Chemistry*

William Edward Schmidt, M.S., *Assistant Professor of Chemistry*

David Gover White, B.Chem.Eng., *Assistant Professor of Chemistry*

Bachelor of Arts or Bachelor of Science with a major in Chemistry (Columbian College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60 and 61. The following first group courses must be included: Chemistry 11-12, 21, and 22; Mathematics 19 and 20; Physics 5, 6, 7, and 8.

Required: the general requirements, as stated on pages 75-80, including the following second group courses: Chemistry 111-12, 113-14, 122, 151-52, and 135 or 155 (two credit hours). The work of the junior and senior years must be approved by the Department. The German language is strongly recommended for all majors, and both French and German are recommended for students planning to do graduate work.

Master of Arts or Master of Science in the field of Chemistry (Columbian College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Chemistry from this University, or the equivalent. Required: the general requirements as stated on pages 81-84. The thirty hours of required work must include Chemistry 131-32, 193, 211-12, 251-52, 299-300, and the program must include at least four credit hours of laboratory courses. On the basis of failure to pass qualifying examinations given during the first week of classes, a student may be excluded from these required courses and advised to review prerequisite courses. A reading knowledge examination in French or German (German preferred) must be passed before the second half of the work is started.

Bachelor of Science in Engineering with an option in Chemistry (School of Engineering).—See pages 124-26 and 129-30. The Chemistry courses required for this degree are the same as those required for the Bachelor of Science degree with major in Chemistry as itemized above.

Bachelor of Arts in Education with a teaching field in Chemistry (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the Chemistry option, page 151; and the professional courses listed on pages 155-56.

Registration.—Before completing registration each student must obtain from the representative of the Department an assignment to lecture, recitation, and laboratory sections.

FIRST GROUP

†3-4 Survey of Physical Sciences (4-4)

Survey of physical science. An introduction to the physical sciences

* On leave of absence 1953-54.

including chemistry, physics, astronomy, and geology with emphasis on analysis of scientific method and its achievements rather than on the mechanics of science. A terminal course for non-science majors. Laboratory fee, \$9 a term. Lecture (3 hours); laboratory (3 hours). (Not offered in 1953-54.)

- †11-12 *General Chemistry* (4-4) Harkness, Perros, White
Chemistry 11-12 is an elementary course in general chemistry. Prerequisite: one year of high school algebra. Laboratory fee, \$15 a term. Lecture (2 hours); laboratory (4 hours); recitation (1 hour)—morning, afternoon, and evening sections. (Also offered 1953 summer term.)

Chemistry 11x, same as 11, offered spring term. Morning, afternoon, and evening sections.

Chemistry 12x, same as 12, offered fall term. Afternoon and evening sections.

- 21 *Qualitative Inorganic Analysis* (4) Vincent
Theoretical and practical study of methods of separating and identifying the more common cations and anions using semi-micro techniques. Prerequisite: Chemistry 12. Laboratory fee, \$15. Lecture (2 hours); laboratory (6 hours)—morning, afternoon, and evening sections. (Also offered 1953 summer term.)

Chemistry 21x, same as 21, offered spring term. Afternoon and evening sections.

- 22 *Quantitative Inorganic Analysis I* (4) Schmidt
Theory and practice of quantitative analysis by typical volumetric and gravimetric procedures. Prerequisite: Chemistry 21. Laboratory fee, \$15. Lecture (2 hours)—morning and evening sections; laboratory (6 hours)—morning, afternoon, and evening sections.

SECOND GROUP

- †111-12 *Physical Chemistry Lectures* (3-3) Wood
Introduction to physical chemistry. Students registering for Chemistry 111-12 must register concurrently for Chemistry 113-14 unless they already have adequate credit for physical chemistry laboratory. Prerequisite: Chemistry 22 and 152; Mathematics 20; Physics 8. Lecture (3 hours)—morning and evening sections.

- †113-14 *Physical Chemistry Laboratory* (2-2) Wood
Laboratory to accompany Chemistry 111-12. Students registering for Chemistry 113-14 must register concurrently for Chemistry 111-12 unless they already have credit for lectures in physical chemistry. Laboratory fee, \$15 a term. Laboratory (6 hours)—afternoon and Saturday sections.

- 122x *Quantitative Inorganic Analysis II* (4) Schmidt
A continuation of Chemistry 22 including the theory and practice of organic reagents, electrochemistry, and colorimetry in the analysis of more complex materials. Prerequisite: Chemistry 21. Laboratory fee, \$15. Lecture (2 hours)—afternoon and evening sections; laboratory (6 hours)—morning and evening sections.

†131-32 *Inorganic Chemistry (2-2)* Naeser
Application of modern chemical theories to inorganic substances and reactions; detailed study, developed from the periodic table, of the descriptive chemistry of the more common elements. Prerequisite: Chemistry 152. Prerequisite or concurrent registration: Chemistry 111-12 and 113-14. Evening.

135-36 *Inorganic Chemistry: Preparations (2-2)* Perros
Application of the technique of inorganic chemistry to the preparation and purification of a list of selected substances. Prerequisite: Chemistry 152; prerequisite or concurrent registration: Chemistry 111-12 and 113-14. Laboratory fee, \$15 a term. Laboratory (6 hours), evening.

Chemistry 135x, same as 135, offered spring term. Evening.

†151-52 *Organic Chemistry (4-4)* Wrenn, Sager
Chemistry of the compounds of carbon. Credit is not given for Chemistry 151 until Chemistry 152 is completed. Prerequisite: Chemistry 21. *Chemistry 151.*—Laboratory fee, \$9. Lecture (3 hours)—morning and evening sections; laboratory (3 hours)—afternoon and evening sections. *Chemistry 152.*—Laboratory fee, \$15. Lecture (2 hours)—morning and evening sections; laboratory (6 hours)—afternoon and evening sections. (Also offered 1953 summer term.)

155x *Organic Chemistry: Preparations (2 or 3)* Wrenn
The synthesis of organic compounds and the application of the technique of organic chemistry to the preparation of pure compounds, using larger amounts and greater refinements than in Chemistry 151-52. Prerequisite: Chemistry 22 and 152. Laboratory fee, \$9 a credit hour. Time to be arranged.

156x *Qualitative Organic Analysis (3)* Wrenn
The identification of pure organic compounds, the separation of mixtures, and the identification of their components. Required of all students planning thesis work in the field of Organic Chemistry. Prerequisite: Chemistry 22 and 152. Laboratory fee, \$15. Lecture (1 hour); laboratory (6 hours)—evening.

191x *History of Chemistry (2)* Perros
The development of chemistry, and the biographies of eminent contributors to the science. Prerequisite: Chemistry 22 and 152. 1953-54 and alternate years. Morning.

193 *Chemical Literature (1)* Wrenn
A general course in chemical literature with reference work and reports. Prerequisite: Chemistry 22 and 152; prerequisite or concurrent registration: Chemistry 111-12 and 113-14. Evening.

THIRD GROUP

203x *Chemical Kinetics (2)* Wood
The rates of chemical reactions and the factors influencing them. Prerequisite: Chemistry 112. 1953-54 and alternate years, evening.

- 211-12 *Advanced Physical Chemistry* (2-2) Wood
Development of the principles of thermodynamics and kinetic theory and their application to chemical problems. Prerequisite: Chemistry 111-12 and 113-14. Evening.
- 216 *Statistical Mechanics* (3) Sager
An introduction to classical and quantum statistics designed to acquaint the student with the basic principles and application of the method. Prerequisite or concurrent registration: Chemistry 212, or permission of instructor. 1954-55 and alternate years, evening.
- 221-22 *Advanced Analytical Chemistry* (2 or 3)
A study of the theory and application of chemical and physico-chemical methods of analysis. Prerequisite: Chemistry 22 and 122. The lectures may be taken for 2 credits a term without the laboratory work. Laboratory fee, \$9 a term. 1954-55 and alternate years—lecture (2 hours); laboratory (3 hours—optional).
- 226 *Quantitative Organic Analysis* (3) Vincent
Micro and semi-micro procedures. Prerequisite: Chemistry 122 and 152; permission of the instructor. Laboratory fee, \$15. Time to be arranged.
- †231-32 *Special Topics in Inorganic Chemistry: the Chemistry of the Less Familiar Elements* (2-2) Perros
Prerequisite: Chemistry 132 and 152. 1954-55 and alternate years, evening.
- 233-34 *Radiochemistry* (2-2)
The preparation, properties, and uses of radioactive isotopes, both natural and artificial. Prerequisite: Chemistry 131-32. (Not offered in 1953-54.)
- 251-52 *Advanced Organic Chemistry* (3-3) Wrenn
The syntheses, reactions, and properties of carbon compounds; the fundamental theories of organic chemistry. Prerequisite: Chemistry 152; prerequisite or concurrent registration: Chemistry 111-12, 113-14, and 193. Evening.
- 253 *Advanced Synthetic Organic Chemistry* (3) Wrenn
A critical study of the reactions employed in the synthesis of organic compounds. Prerequisite: Chemistry 251. Time to be arranged.
- 257 *Theoretical Organic Chemistry* (3) Sager
Prerequisite: Chemistry 252. A survey of modern theories of organic chemistry with emphasis on reaction mechanisms. 1953-54 and alternate years, evening.
- 258 *Special Topics in Organic Chemistry* (2)
Prerequisite: Chemistry 251-52. (Not offered in 1953-54.)

291-92 *Seminar: Recent Developments in
Chemistry (1-1)*

The Staff

Individual investigations of special problems. All students registered for a Master's degree in Chemistry are expected to attend this seminar during residence for the degree, and to take part in its programs. Credit for participation in the seminar work may be obtained by registering for this course during the last two terms of residence; this credit, however, is based upon the seminar work during the entire period of residence. Evening.

295-96 *Research (arr.)*

The Staff

Research on problems approved by the Staff. Open to qualified students with advanced training. Laboratory fee, \$6 a credit hour. Time and credits to be arranged. (Also offered 1953 summer term.)

299-300 *Thesis (3-3)*

The Staff

Laboratory fee, \$15 a term. Time to be arranged. (Also offered 1953 summer term.)

CIVIL ENGINEERING

- *Carl Hugo Walther, B.E., M.C.E., *Professor of Civil Engineering*
 Bruce Douglas Greenshields, C.E., Ph.D., *Professor of Civil Engineering*
 Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Professor of Civil Engineering*
 Waldo Edward Smith, B.E. in C.E., M.S. in C.E., *Professorial Lecturer in Civil Engineering*
 Raymond Pugh Eyman, C.E., *Associate Professor of Civil Engineering*
 Haaren Albert Miklofsky, B.C.E., M.Eng., D.Eng., *Associate Professor of Civil Engineering, Executive Officer*
 _____, *Assistant Professor of Civil Engineering*
 Ralph Edward Fuhrman, B.S. in C.E., M.S. in Eng., *Lecturer in Civil Engineering*
 Alvin Raymond Schwab, B.S. in E.E., M.S. in Eng., *Lecturer in Civil Engineering*
 Elmer Wallace Teagarden, B.S. in E.E., *Lecturer in Civil Engineering*
 James Edward Robins, B.C.E., M.Eng., *Lecturer in Civil Engineering*
 William John Ruby, M.S. in Eng., *Lecturer in Civil Engineering*
 Garrett Carper Tewinkel, B.S. in M.E., M.C.E., *Lecturer in Civil Engineering*
 Vincent Harry Hennessy, B.C.E., *Associate in Civil Engineering*
- Bachelor of Civil Engineering (School of Engineering).*—See pages 124-27 for statement of requirements.
Master of Science in Engineering (School of Engineering).—See pages 131-32 for statement of requirements.
Civil Engineer (School of Engineering).—See pages 132-33 for statement of requirements.

FIRST GROUP

- 2 *Plane Surveying (2)*
 Principles, methods, and instruments used in surveying; with field work. Prerequisite: Trigonometry. Surveying fee, \$12. Lecture (1 hour)—morning and Saturday sections; field work (3 hours)—afternoon and Saturday sections. Eyman
- 15 *Navigation (3)*
 Principles, methods, and instruments used in surface and aerial navigation. Charts, piloting, dead-reckoning, nautical astronomy, position determination. Prerequisite: Trigonometry. Evening. Greenshields, Eyman
- 21 *Analytical Mechanics: Statics (2)*
 Composition and resolution of forces; axial stresses, centroids; friction.

* On leave of absence fall term 1953-54.

Prerequisite: Physics 6; prerequisite or concurrent registration: Mathematics 20. Morning and evening sections.

Civil Engineering 21x, same as 21, offered spring term. Evening.

22 Analytical Mechanics: Dynamics (3) Greenshields and Staff

Kinematics of a particle; kinetics of a body in translation, rotation, and plane motion; work and energy; impulse and momentum; simple vibrations. Prerequisite: Civil Engineering 21. Morning and evening sections.

Civil Engineering 22x, same as 22, offered fall term. Evening.

23 Higher Surveying (4) Eyman

Elements of geodesy, triangulation, topography, hydrography, and precise and trigonometric leveling, with field work. Prerequisite: Civil Engineering 2. Surveying fee, \$12. Lecture (3 hours), field work (3 hours). 1953-54 and alternate years—lecture, morning; field work, afternoon. 1954-55 and alternate years—lecture, evening; field work, Saturday morning.

24 Elementary Photogrammetry (3) Tewinkel

History and development of photogrammetry; fundamental principles, methods, and instruments used in photographic surveying and production of maps; photographic interpretation; principles of stereoscopy. Laboratory work with photographs and instruments in determination of scale, tilt, relief, and map plotting. Prerequisite: Civil Engineering 23; Physics 6. Laboratory fee, \$3. Evening.

25-26 Engineering Materials (2-2) Eyman

Emphasis on properties and uses of nonmetallic materials such as cements, fuels, and plastics; and metallic materials including steel, copper, aluminum, and alloys. Prerequisite or concurrent registration: Chemistry 12. Morning and evening sections.

SECOND GROUP

123 Strength of Materials (3) Greenshields, Miklofsky

Tension, compression, shear, flexure, and torsion; deflection; combined and working stresses. Prerequisite: Civil Engineering 22. Morning and evening sections.

136 Hydraulics (3) Mason, Greenshields

Hydrostatics; flow through pipes and open channels; laminar and turbulent flow. Prerequisite: Civil Engineering 22. Morning and evening sections.

140 Materials and Hydraulics Laboratory (2) Walther, Hennessy

Determination of the properties of materials by mechanical tests, and a study of the flow of fluids. Prerequisite: Civil Engineering 123; prerequisite or concurrent registration: Civil Engineering 26 and 136. Laboratory fee, \$9. Laboratory (3 hours)—afternoon and evening sections.

- 141 Graphic Statics (3)**
Fundamental principles; analyses of beams; determination of stresses in roof trusses and framed bents. Prerequisite or concurrent registration: Civil Engineering 123. Drafting-room fee, \$2. Lecture (2 hours); drafting room (3 hours). 1953-54 and alternate years—lecture and drafting room, evening. 1954-55 and alternate years—lecture and drafting room, afternoon.
- 142 Bridge Stresses (3)** Miklofsky
Determination of stresses in modern types of bridge trusses. Prerequisite: Civil Engineering 141. Drafting-room fee, \$2. Lecture (2 hours); drafting room (3 hours). 1953-54 and alternate years—lecture and drafting room, evening. 1954-55 and alternate years—lecture and drafting room, afternoon.
- 147-48 Structural Design (2-2)** Miklofsky
Computations and drawings for the design of steel structures. Prerequisite: Civil Engineering 142. Drafting-room fee, \$5 a term. Drafting room (6 hours). 1953-54 and alternate years—drafting room, afternoon. 1954-55 and alternate years—drafting room, evening.
- 149-50 Concrete and Masonry Construction (3-3)** Greenshields
Plain concrete, general properties and theory of reinforced concrete, foundations, and retaining walls. Prerequisite: Civil Engineering 25 and 123. Civil Engineering 149, laboratory fee, \$9; Civil Engineering 150, drafting-room fee, \$2. Lecture (2 hours); laboratory or drafting room (3 hours). 1953-54 and alternate years—lecture, morning; laboratory or drafting room, afternoon. 1954-55 and alternate years—lecture, evening; laboratory or drafting room, evening.
- 151-52 Statically Indeterminate Structures (2-2)** Robins
A study of such structures as continuous spans, rigid frames, and arches by methods of work, slope deflection, and moment distribution. Prerequisite: Civil Engineering 142. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.
- 164 Highway Engineering (3)** Greenshields
Highway economics, location, construction, and maintenance. Prerequisite: Civil Engineering 25. 1953-54 and alternate years, morning. 1954-55 and alternate years, evening.
- 181-82 Water Supply and Sewerage (3-3)** Fuhrman
Collection, storage, purification, and distribution of water; sewerage systems and treatment of sewage. Prerequisite: Civil Engineering 136; Chemistry 12. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.
- 187-88 Engineering Contracts and Specifications (2-2)** Eyman
Contract essentials, types, and legal principles; analysis and preparation of specifications. Prerequisite or concurrent registration: Civil Engineering 25-26. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.

189-90 *Civil Engineering Proseminar (1-1)* Greenshields
Late afternoon.

192 *Soil Mechanics (3)* Miklofsky
The basic concepts of the behavior of soil as an engineering material.
Prerequisite: Civil Engineering 25, 123, and 136. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.

THIRD GROUP

201 *Advanced Mechanics of Materials (3)* Walther
Advanced topics in the mechanics of materials. Stresses at a point, thick cylinders, general bending, torsion, localized stress, and stress concentration. 1954-55 and alternate years, evening.

202 *Applied Elasticity (3)* Walther
The theory of elasticity as applied in three-dimensional analysis of stress, strain, torsion, and bending. 1954-55 and alternate years, evening.

203 *Foundation Problems (3)* Miklofsky
The integration of structural theory and soil mechanics, as applied to foundation, retaining wall, slope stability, and drainage problems. The interrelationship of structural action and soil stability is emphasized. 1953-54 and alternate years, evening.

204 *Theory of Structures (3)* Miklofsky
Advanced analysis and design of indeterminate structures, such as, continuous and suspension bridges, high building frames, arches, rigid frames, and columns. 1953-54 and alternate years, evening.

205 *Prestressed Concrete Theory (3)* Schwab
A study of the theory and applications of prestressed concrete, including the design of prestressed concrete structures. 1953-54 and alternate years, evening.

299-300 *Thesis (3-3)* The Staff
Time to be arranged.

CLASSICAL LANGUAGES AND LITERATURES

John Francis Latimer, Ph.D., *Associate Professor of Classical Languages and Literatures, Executive Officer*

The Department of Classical Languages and Literatures offers two types of courses: (1) those which illustrate the literary, linguistic, and cultural backgrounds of Western Civilization, and for which no knowledge of the ancient languages is required. These courses are designed to supplement and strengthen the broad general backgrounds of students who plan to concentrate in the fields of English or other literatures, History, Art, Drama, or Philosophy, or of those who wish to increase their general knowledge and appreciation of the bases of the great humanistic traditions as part of a well-rounded education. (2) Two years of Latin are offered for those who wish to fulfill the language requirements of the Junior College as set forth on page 59.

COURSES IN ENGLISH TRANSLATION

FIRST GROUP

- 71-72 *Greek and Roman Backgrounds in Literature* Latimer
(3-3)
Selected Greek and Roman masterpieces and their literary influence.
(Not offered in 1953-54.)

SECOND GROUP

- 109 *Greek and Latin in Current English* (3) Latimer
Derivation, meaning, and use of all varieties of current English words stemming from Latin and Greek. Principles of vocabulary building. Scientific and technical terms included as needs of the class indicate.
(Not offered in 1953-54.)
- 110 *Greek and Roman Selected Plays* (3) Latimer
1954-55 and alternate years.

LANGUAGE COURSES

FIRST GROUP

- †1-2 *First-year Latin* (3-3) Latimer
Functional presentation of the essentials of the language, with appropriate reading selections. Development of English derivatives, and introduction to Roman life and literature. Evening.
- †3-4 *Second-year Latin* (3-3) Latimer
A continuation of the preceding course, but with increased emphasis on reading Latin selections which illustrate Roman life and literature. Continuation of vocabulary building in English. Prerequisites: Latin 1-2 or two years of high school Latin. Evening.

DERMATOLOGY AND SYPHILOLOGY

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology.*
Executive Officer

George William Creswell, A.B., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Hayden Kirby-Smith, B.S., M.D., *Assistant Clinical Professor of Dermatology and Syphilology*

Theodore Claremont Chen Fong, M.D., *Associate in Dermatology and Syphilology*

James Quincy Gant, Jr., M.S., M.D., *Associate in Dermatology and Syphilology*

Wendell Melvin Willett, M.D., *Associate in Dermatology and Syphilology*

Reuben Goodman, M.D., *Clinical Instructor in Dermatology and Syphilology*

313 *Dermatology and Syphilology* The Staff
Lectures on diseases of the skin and syphilis. One hour a week.

316 *Neurosyphilis* Fong
Lectures, clinical demonstrations, and practical diagnostic and therapeutic procedures.

317-18 *Clinic* The Staff
Case demonstrations, diagnosis, and treatment of skin diseases and syphilis. Gallinger Hospital.

407-8 *Clinic* The Staff
Dermatology and syphilology in infants and children. Childrens Hospital. Two hours a week.

409-10 *Clinic* The Staff
Clinical demonstrations, diseases of the skin. Two hours a week. Emergency Hospital.

411-12 *Clinic* The Staff
Clinical demonstrations, diseases of the skin, and diagnosis and therapy of syphilis. Two hours a week. University Hospital.

ECONOMICS

Arthur Edward Burns, Ph.D., *Professor of Economics*
 Donald Stevenson Watson, Ph.D., *Professor of Economics*
 Gerhard Colm, Dr. rer. pol., *Professorial Lecturer in Economics*
 Ralph Aubrey Young, M.B.A., Ph.D., *Professorial Lecturer in Economics*
 Jacques Jacobus Polak, Ph.D., *Professorial Lecturer in Economics*
 Edward Campion Acheson, Ph.D., *Associate Professor of Finance*
 Frederick Thorp Moore, Ph.D., *Associate Professor of Economics*
 James Coogan, Ph.D., *Assistant Professor of Economics, Executive Officer*
 Walter David Fackler, A.B., *Assistant Professor of Economics*
 Wilson Emerson Schmidt, Ph.D., *Assistant Professor of Economics*
 George Jaszi, Ph.D., *Lecturer in Economics*

Bachelor of Arts with a major in Economics (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, including Economics 1-2 and Statistics 51, see page 60. Required (1) Economics 101 and three additional credit hours in economic theory (courses numbered 100-109); (2) six credit hours in each of three of the five following groups: finance (courses numbered 120-29), labor (courses numbered 140-49), government and economic policy (courses numbered 160-69), public utilities and transportation (courses numbered 170-79), and international economics (courses numbered 180-92); (3) Statistics 111-12, and nine credit hours of other second-group courses selected from the following departments—Accounting, Business Administration, History, Philosophy, Political Science, Sociology, and Statistics.

Bachelor of Arts with a major in Latin American Civilization and Culture (Columbia College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Required: the general requirements stated on pages 75-80, and the grade of "pass" on the Latin American Civilization and Culture major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the political and social history, the economic development, the governmental structure and international relations, the principal literary works and writers, and a reasonable acquaintance with the spoken language of the Latin American republics. The Department of Economics provides a proseminar (Economics 193-94) intended to assist the student in preparing himself for the major examination. For further details, see the pamphlet, which is available in the Office of the Dean of Columbia College.

Master of Arts in the field of Economics (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Economics at this University, or the equivalent. Required: the general requirements for the degree are stated on pages 81-84. The thirty hours of required work must include twelve credit hours in courses numbered 201-210.

Bachelor of Science in Engineering with an option in Economics (School of Engineering).—See pages 124-26 and 129-30.

For information concerning *Bachelor of Arts* and *Master of Arts* curricula in the *School of Government* with courses in *Economics*, see pages 166-75.

FIRST GROUP

1-2 *Principles of Economics** (3-3)

The Staff

Survey of the major economic principles, institutions, and problems in contemporary economic life. *Economics 1* is prerequisite to *Economics 2*. Morning and evening sections. (Also offered 1953 summer term.)

Economics 1x, same as 1, offered spring term. Morning and evening sections.

Economics 2x, same as 2, offered fall term. Evening.

SECOND GROUP*

101 *Economic Theory* (3)

Fackler, _____

Introduction to formal economic theory; advanced analysis of demand, supply, and price relations. Morning and evening sections. (Also offered 1953 summer term.)

Economics 101x, same as 101, offered spring term. Morning and evening sections.

102 *History of Economic Thought* (3)

History of the major schools of economic thought; influence of changing problems on theory. (Not offered in 1953-54.)

105 *Business Cycles* (3)

Coogan

Analysis of strategic factors in economic instability; survey of recent business cycle theories. Morning.

106 *Income and Employment* (3)

Fackler

The measurement, composition, and determinants of the national income. Morning.

109 *Distribution Theory and Welfare**Economics* (3)

Advanced economic theory with emphasis on income distribution and the literature on welfare economics. Prerequisite: *Economics 101* or the equivalent.

Summer term 1953.

121 *Money and Banking* (3)

Acheson

Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems. Morning and evening sections. (Also offered 1953 summer term.)

Economics 121x, same as 121, offered spring term. Evening.

122 *The Supply and Control of Money* (3)

Factors determining the effect of bank policy and government finance on the volume of purchasing power and level of prices; historical development; current practice and problems. Prerequisite: *Economics 121*. Evening.

* *Economics 1-2* is prerequisite to all other courses in *Economics*.

- 123 **Monetary Theory (3)**
Principal contemporary theories; background of recent monetary policy. Prerequisite: Economics 121. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.
- 126 **Foreign Exchange and International Finance (3)** Acheson
Theory and practice of foreign exchanges; the gold standard and international finance during the nineteenth century; war and postwar exchange problems. Prerequisite: Economics 121. Morning.
- 133x **The Economy of the Soviet Union (3)** Coogan
Development and main features of the economic life of the Soviet Union.
Summer term 1953.
- 141-42 **Labor Economics (3-3)** Fackler
Wages, hours, and employment; labor organizations; labor legislation and the federal administrative boards. Morning.
- 161-62 **Public Finance and Taxation (3-3)** Fackler
General survey of government expenditures, sources and methods of taxation, economic effects of expenditures and taxes, and of government debt policies. Morning.
- 165 **Government Control of Economic Activity (3)** Watson
Changing role of government in promoting and regulating economic activity; types and spheres of control. Evening.
- 166 **Comparative Systems of Economic Reform (3)** Watson
Critical analysis of the major theories of economic and social reform, with special attention to their origins and backgrounds.
Summer term 1953.
- 167 **Economics of Planning (3)** Watson
Analytical comparison of economic systems coordinated by market price with those coordinated by central authority. (Not offered in 1953-54.)
- 172 **Public Utilities (3)** Kennedy
The economics of public utilities with emphasis on regulation, valuation, and rate-making. (Not offered in 1953-54.)
- 175 **Railroad Transportation (3)** Kennedy
Railroad history, organization, rate-making theory and practice, with emphasis on the work of the Interstate Commerce Commission. 1954-55 and alternate years.
- 176 **Motor, Air, and Water Transportation (3)** Kennedy
History, organization, competition, rates, and regulation of motor, air, and water carriers; coordination of transportation. 1954-55 and alternate years.

- 181-82 *International Economics* (3-3) Schmidt
Survey of world economics; theories of international trade; analysis of international economic problems; the international organizations. Afternoon and evening sections. (Also offered 1953 summer term.)
- 183-84 *International Economic Policy* (3-3) Schmidt
Historical and theoretical analysis of tariffs, exchange rates, exchange and trade control, discrimination, and capital movements; policies related thereto. Evening.
- 185-86 *Economic History and Problems of South America* (3-3)
Economic development of South America (excluding Colombia and Venezuela). Particular emphasis on economic developments and problems since the First World War. 1954-55 and alternate years, evening.
- 187-88 *Economic History and Problems of the Caribbean Area* (3-3)
Economic developments of Colombia, Venezuela, Mexico, and the Central American and West Indian republics. Particular emphasis on economic developments and problems since the First World War. 1953-54 and alternate years, evening.
- 191 *United States Foreign Economic Policy since 1934* (3) Schmidt
The Reciprocal Trade Agreements program; monetary agreements; the economic aspects of lend-lease, the Marshall Plan, and other foreign aid programs; the United States and the international organizations. (Not offered in 1953-54.)
- 193-94 *Proseminar in Latin American Civilization and Culture* (3-3)
Coordination and review course. Open only to students majoring in Latin American Civilization and Culture. Time to be arranged.
- 198 *Readings in Economics* (3) The Staff
Comprehensive survey of economics. Open only to students whose major is economics and who are in their last term. Time to be arranged.
Economics 198x, same as 198, offered fall term. Time to be arranged.

THIRD GROUP

- 201-2 *History and Literature of Economic Thought* (3-3) Burns
Critical analysis and interpretation of the development and the literature of economic thought; origins and problems of the major types of theory; their relation to present problems and policies. Evening.
- 203-4 *Contemporary Economic Theory* (3-3) Watson
The contributions of Marshall, Chamberlin, Robinson, Hicks, and others. Evening.

- 205 *Business Cycle Theory* (3) Polak
The contributions of the pre-Keynesian writers. Evening.
- 206 *Theory of Employment and Income* (3) Polak
Determinants of the level of employment and income; Keynes' and classical systems contrasted; recent literature on the subject. Evening.
- 208 *The National Income* (3) Jaszi
The theory of economic aggregates; policy aspects of national income. Evening.
- 209 *Readings in the History of Economic Thought* (3) Burns
Research in special problems in the history of economics. Prerequisite: Economics 201-2. Evening.
- 210 *Methodology in Economics* (3) Burns
The nature of economic theory; relations of economics to philosophy and other disciplines. (Not offered in 1953-54.)
- 211 *Readings in Advanced Economics* (3) The Staff
Integration and coordination of advanced economic theories. Evening.
- 213 *Economic Thought in the Twentieth Century* (3) Burns
Continuation of Economics 201-2. The principal trends in economic thought during the present century. Summer term 1953.
- 216 *Theories of Income Distribution* (3)
The classical, marginal, and modern theories of distribution; Pareto's Law and the problem of personal distribution. (Not offered in 1953-54.)
- 218 *Economic Analysis and Accounting Concepts* (3)
The use of accounting concepts in the economic analysis of the business enterprise, of the national income, of international economic relations. (Not offered in 1953-54.)
- 219-20 *Managerial Economics* (3-3) Watson
Analysis of price, production, and inventory policies of business firms. Evening. (Also offered 1953 summer term—as Economics 215 (3).)
- 223-24 *Monetary Policy and Central Banking* (3-3) Young
The money system in its relation to national income; monetary policies of the Federal Reserve and other central banking systems. Evening.
- 225 *Economic Stabilization Policies* (3)
Appraisal of economic policies directed towards the stabilization of the economy, with special attention to the problem of full employment. Evening.

- 241 *Labor Economics* (3) _____
Analysis of labor problems, with special reference to labor organizations; intensive study of federal regulation and participation in capital-labor relations. Evening.
- 244 *Labor Relations* (3) _____
The collective bargaining contract and the elements comprising it; analysis of the policies of labor and of management. Evening.
- 251x *Theories of Economic Development* (3) _____
Growth and change in economic activity; capital accumulation; innovations in technology and business organization. Evening. (Also offered 1953 summer term.)
- 260 *Theory of Public Finance* (3) _____
Survey of the literature on public finance, with special attention to controversial issues. (Not offered in 1953-54.)
- 261-62 *Public Finance and Fiscal Policy* (3-3) Colm
Survey of the major contributions to the theory and doctrines of public finance. Special problems: deficit financing; current tax problems; and federal, state, and local financial relationships. Evening.
- 265 *Theory of Economic Policy* (3) Watson
The nature, forms, methods, and objectives of economic policy; the relation of economic theory to economic policy. Evening.
- 266 *Problems of Governmental Economic Policy* (3) Watson
The execution of economic policies as they are affected by the processes of government. Evening.
- 267-68 *Economic Organization of the Soviet Union* Coogan
(3-3)
Development of the Russian economy; organization under the Soviets; policies and problems: monetary, fiscal, production, allocative, foreign trade, economic growth. Evening.
- 281-82 *International Economics* (3-3) Schmidt
The modern theories of international economics; the variables determining the balance of payments; techniques to obtain balance-of-payments equilibrium. Evening.
- 285-86 *Public and Private Finance in Latin America* (3-3) _____
Corporate finance, banking, and capital movements in Latin America; fiscal problems; public debt, deficit financing, taxation, public expenditures; foreign-exchange controls and problems. A reading knowledge of Spanish or Portuguese is required. Evening.
- 287-88 *Economic Problems of Latin America* (3-3) _____
Foreign trade and foreign commercial policy; growth of industry and agriculture; government control of economic activity; recent economic trends and problems. (Not offered in 1953-54.)

289-90 *Problems in International Financial Policy* Acheson
(3-3)

International financial problems in recent decades; changes in monetary standards; the International Monetary Fund and the International Bank for Reconstruction and Development. Evening.

297-98 *Thesis* (School of Government majors) (3-3) The Staff

299-300 *Thesis* (3-3)

The Staff

EDUCATION

James Harold Fox, A.M., Ed.D., *Professor of Education, Executive Officer*

Burnice Herman Jarman, A.M., Ed.D., *Professor of Education*

Blake Smith Root, A.M., Ed.D., *Professor of Education*

Ralph Windsor Ruffner, A.M., Ed.D., *Professor of Education*

Meredith Chester Wilson, B.S., *Adjunct Professor of Education*

Ray LaForest Hamon, Ph.D., *Professorial Lecturer in Education*

Charles Edward Bish, A.M., Ed.D., *Professorial Lecturer in Education*

John Frederick Brougher, A.M., Ed.D., *Professorial Lecturer in Education*

Frances Holliday, A.M., Ed.D., *Professorial Lecturer in Education*

Jean Dresden Grambs, A.M., Ed.D., *Professorial Lecturer in Education*

Madaline Kinter Remmlein, Ph.D., J.D., *Lecturer in Education*

LuVerne Crabtree Walker, A.M., *Lecturer in Education*

*Helen Barton Goodwin, A.M., *Lecturer in Education*

Florence Mary Lumsden, A.M., Ed.D., *Lecturer in Education*

William Samuel Rumbough, A.M., Ed.D., *Lecturer in Education*

Howard Odin Johnson, A.M., Ed.D., *Lecturer in Education*

Arne William Randall, A.M., *Lecturer in Education*

Raymond Ray Reed, A.M., *Lecturer in Education*

Joseph Bueol Johnson, A.M., Ed.D., *Lecturer in Education*

Mary Ellen Coleman, A.M., *Lecturer in Education*

Mary Louise Collings, A.M., *Lecturer in Education*

Harold Maurice Wilson, A.M., Ed.D., *Lecturer in Education*

Grover LaMarr Angel, A.M., Ed.D., *Lecturer in Education*

CONSULTANTS IN RESEARCH

Wesley Earl Armstrong, M.S., Ed.D., *Chief for Teacher Education, U. S. Office of Education*

John Robert Ludington, Ph.D., *Specialist of Industrial Arts, U. S. Office of Education*

Francis Brown, Ed.D., *Staff Associate, American Council on Education*

FIELD SERVICE COORDINATORS

William Wallace Rich, A.M., *Supervisor of Secondary Schools, Arlington County, Virginia*

Helen King Finlay, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*

* On leave of absence 1953-54.

Bachelor of Arts in Education (School of Education).—Prerequisite: the Education curriculum in the Junior College or the equivalent, or a certificate of graduation from an approved normal school or the equivalent, see page 62.

Required: the satisfactory completion of a program of at least sixty-six credit hours in addition to the general education background courses in the Junior College curriculum. Each program is planned individually to meet the certification requirements of the student, see pages 149-55 and 155-56.

Master of Arts in Education (School of Education).—Prerequisite: a Bachelor's degree from an accredited institution. Programs are planned individually. The following areas of specialization are available: (1) school administration—superintendency, secondary school principalship, or elementary school principalship; (2) adult education; (3) secondary education—the senior or junior high school; (4) elementary education—intermediate grade or early childhood education; (5) agricultural extension education; (6) curriculum; (7) employee training; (8) guidance; (9) physical education.

Doctor of Education (School of Education).—See pages 159-60.

A Reading Clinic

Diagnosis of reading difficulties; individual or group lessons without academic credit. Fee: for diagnosis, \$25; for individual lesson, \$3.50; for group lesson, \$2.50; material fee, \$3.

Coleman and Staff

SECOND GROUP

109-10 Learning and Teaching (3-3)

For the general student as well as the prospective teacher. Fall term: nature of learning approached through the study of actual classroom situations. Spring term: nature of teaching approached through observation of typical classroom situations. Lecture (2 hours), conference (1 hour)—afternoon and evening sections; field work (2 hours)—to be arranged. (Also offered 1953 summer term.)

Ruffner

111-12 Elementary School Curriculum (3-3)

For seniors in the elementary school curriculum. Principles of elementary education, including general classroom procedures and common teaching skills. Fall term: special emphasis upon materials and methods in language arts, including reading, writing, spelling, and speech. Spring term: special emphasis upon materials and methods in social studies and arithmetic. Prerequisite: Education 109-10 and 121-22. Late afternoon.

113 Elementary School Art (3)

For juniors in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 29. Evening.

Randall

114 Elementary School Music (3)

For juniors in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 29. Evening.

Reed

115 Elementary School Classroom Procedures (3)

For experienced teachers. Survey of current classroom practices with particular attention to the determination of children's needs and interests, providing for individual differences, and evaluation. (Not offered in 1953-54.)

116 Elementary School Social Studies (3)

For experienced teachers. Content and methods of teaching. (Not offered in 1953-54.)

117 Elementary School Science (3)

For experienced teachers. Materials and methods.
Summer term 1953.

121-22 Society and the School (3-3)

Angel

For the general student as well as the prospective teacher. Fall term: the local, national, and international roles of education; cooperation of the school with other community agencies. Spring term: organization and operation of schools; principles and functions. Lecture (2 hours), conference (1 hour)—afternoon and evening sections; field work (2 hours)—to be arranged. (Also offered 1953 summer term.)

125 Elementary School Reading (3)

Coleman

For experienced teachers. Developmental and remedial approaches to reading problems. Demonstrations of diagnostic and corrective techniques used in the Reading Clinic.
Summer term 1953.

128 Children's Literature (3)

Walker

For juniors in the elementary school curriculum. Exploring and evaluating the newer books for children and the children's classics, understanding the contribution of literature in child development, appreciating children's original expressions. Prerequisite: Psychology 1 and 29. Lecture (2 hours)—evening; field work (2 hours)—to be arranged.

131 Common Teaching Skills (3)

Root

For seniors in the secondary school curriculum. Course, unit, and lesson planning; practical techniques used in connection with motivation, the assignment, group procedures, directing study, individual differences, evaluation, clerical routines, discipline, the homeroom, activity sponsorship, public relations. Prerequisite: Education 109-10 and 121-22. Early afternoon.

†133-34 Observation and Practice Teaching (3-3)

Root, _____

For seniors in the elementary or the secondary school curriculum. Education 134, practice-teaching fee, \$9 a credit hour. Admission by permission of the instructor. Prerequisite: Education 109-10 and 121-22. Time to be arranged individually.

SPECIAL METHODS COURSES *

To be elected in the senior year after substantial preparation in the teaching fields concerned by students in the secondary school curriculum. Course requirements and hours of credit vary with license requirements. Practices of successful teachers are studied and actual teaching content as found in current texts and courses of study is reviewed.

* Prerequisite to all special methods courses: Education 109-10, 121-22, and 131. Additional prerequisites are stated under each course.

- 136 *Teaching English* (2 to 4) Lumsden
Prerequisite*: eighteen credit hours of English. Lecture (2 hours)—evening; field work (2 hours)—to be arranged.
- 138 *Teaching Social Studies* (2 to 4) Root
Prerequisite*: twenty-four credit hours of social studies. Lecture (2 hours)—evening; field work (2 hours)—to be arranged.
- 140 *Teaching Mathematics* (3) Weida
Prerequisite*: Mathematics through calculus. Late afternoon.
- 141-42 *Teaching Art* (3-3) Goodwin
Prerequisite*: thirty credit hours of Art. (Not offered in 1953-54.)
- 144 *Teaching Science* (2 to 4) Rumbough
Prerequisite*: twenty-four to forty credit hours of science. Lecture (2 hours)—late afternoon; field work (2 hours)—to be arranged.
- 146 *Teaching Foreign Languages* (2 to 4) Doyle, Keating
Prerequisite*: eighteen credit hours of one foreign language. Late afternoon.
- 148 *Teaching Home Economics* (2) Kirkpatrick
Prerequisite*: thirty credit hours of Home Economics. Time to be arranged.
- 150 *Teaching Business Subjects* (2) Shott
Prerequisite*: thirty credit hours of business education. Time to be arranged.

THIRD GROUP ‡

- 205-6 *The Curriculum*§ (3-3)
For experienced teachers. Fall term: curriculum foundations and issues; comparison of curriculum patterns. Spring term: principles and procedures in curriculum development; group consideration of student problems. Evening. (Also offered 1953 summer term—Education 205 (3).)
- 207 *Curriculum Materials*§ (3)
For experienced teachers. The study and construction of courses of study, resource units, classroom teaching aids, and inexpensive materials; direct application to students' own situations.
Summer term 1953.
- 209-10 *Child Growth and Development*§ (3-3)
Basic factors in human growth and development and their relation to learning and teaching. Related practical experience in studying children; class analyses of procedures and results. Evening.
- 212 *Evaluation in Education*§ (3) Ruffner
Concept of evaluation, relationship between evaluation of ends and

* Prerequisite to all special methods courses: Education 109-10, 131-22, and 151. Additional prerequisites are stated under each course.

‡ A degree from an accredited institution is prerequisite to all third-group courses.

§ Prerequisite: adequate professional preparation.

means, steps involved in the evaluation of learning outcomes. As the course progresses each student develops solutions for evaluation problems related to his work situation. Evening.

- 213-14 *History of Education* (3-3) Jarman
Fall term: the European backgrounds of American education. Spring term: the evolution of the American school system. Evening.

- 215 *Education of the Exceptional** (3)
For classroom teachers. A survey of current problems in the education and guidance of exceptional pupils. Nature and needs of those physically, mentally, or emotionally handicapped; needs of the gifted. Resources for help in correction, diagnosis, therapy, education, and guidance. (Not offered in 1953-54.)

- 217-18 *Contemporary Problems in Education** (3-3) Jarman
Fall term: designed to help students formulate a personal philosophy of education. Spring term: social foundations of education—a study of the forces that shape the policies and offerings of the school. Evening. (Also offered 1953 summer term—Education 217 (3).)

- 219 *Recent Developments in Elementary Education** (3)
For experienced teachers. New areas of emphasis, changing techniques of working with children, curriculum trends, review of recent literature.
Summer term 1953.

- 221-22 *Early Childhood Education** (3-3)
For experienced teachers. Fall term: nursery school and kindergarten education. Spring term: education in the primary grades. Evening. (Also offered 1953 summer term—Education 222 (3). Holliday.)

- 223-24 *Reading Problems** (3-3) Coleman
For experienced teachers. A clinical approach to reading difficulties on elementary and secondary school levels. Demonstrations and observations, with clinic cases. Saturday morning.

- 227-28 *Elementary Education** (3-3)
For experienced teachers. Fall term: elementary school programs, objectives, common characteristics, and major issues. Spring term: current methods and materials in teaching the several instructional areas and the co-curriculum. Saturday morning.

- 229 *Administration of Elementary Education** (3)
For experienced teachers and administrators, with two years of successful teaching in elementary schools. The principal as a school and community leader. Problems of supervision, curriculum development, parent relations, pupil guidance, and management. Evening.

- 231 *Secondary School Classroom Procedures** (3) Bish
Survey of current classroom practices with particular attention to selected topics such as teacher-pupil planning, group procedures, pupil

* Prerequisite: adequate professional preparation.

- security, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature. Evening. (Also offered 1953 summer term.)
- 233 *Audio-visual Education** (3) J. Johnson
Selection and use of audio-visual aids, management of materials and equipment. Material fee, \$5. Lecture (2 hours), laboratory (2 hours)—Saturday.
- 239 *Teaching the Core Curriculum** (3) Bish
An examination and study of classroom teaching procedures appropriate to the core program. Summer term 1953.
- 243 *Human Relations in the Classroom** (3) Grambs
Principles and practices involved in interpersonal relationships between learner and teacher and among learners. Summer term 1953.
- 247-48 *Vocational Education** (3-3) Ruffner, H. Johnson
Fall term: development in the United States, current concepts, agencies involved, problems and trends. Spring term: learning and teaching activities, curriculum content, administration of vocational programs. (Not offered in 1953-54.)
- 251 *Guidance in Secondary Schools** (3) Brougher
Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program. Evening.
- 254 *The Junior High School** (3) Bish, Root
Purposes, organization, core programs, guidance, developing course of study, extra-classroom activities. (Not offered in 1953-54.)
- 255-56 *Secondary Education** (3-3) Root
Fall term: current proposals for the reorganization of secondary education. Spring term: current problems in each of the subject-matter fields. Saturday morning. (Also offered 1953 summer term.)
- 259-60 *Secondary School Management** (3-3) Fox, H. Johnson
For experienced teachers and administrators, with two years of successful teaching in secondary schools. Management planning, execution, and control; criteria of good management; construction of the master schedule; leadership problems incident to the development of new policies and programs. Evening.
- 263-64 *Employee Training* (3-3) Root
Fall term: nature and purposes, organization and administration of programs—orientation, executive, supervisory, apprentice, clerical; skills: training media and techniques; coordination with other management functions. Spring term: current practices, operating policies and programs of selected organizations. Prerequisite: adequate professional preparation or two years of experience in employee training. Evening.

* Prerequisite: adequate professional preparation.

- 271 *School Administration** (3) Fox
A survey course for teachers and prospective administrators. Education and world affairs, national agencies, role of the state, local administration, school finance, legal controls, school plant, public support, democratic administrative procedures, improving teaching conditions. Saturday morning.
- 272 *The Teacher and School Supervision** (3) Fox
Nature, organization, human relationships, and techniques. Saturday morning. (Also offered 1953 summer term.)
- 273-74 *Administration of a School System* (3-3)
A comprehensive survey of the management problems of a beginning superintendent; does not anticipate previous experience as a superintendent. Five years of successful experience as teacher and principal are required. (Not offered in 1953-54.)
- 275 *School Finance** (3)
Educational financial theory, practice, and control, including methods of financing. (Not offered in 1953-54.)
- 276 *Seminar: Public Relations in School Administration** (3) Root
Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy-making. (Not offered in 1953-54.)
- 278 *School Law** (3) Remmlein
Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group. Evening.
- 279-80 *Adult Education** (3-3) Ruffner
Fall term: current concepts and objectives, agencies involved, programs on all levels—international through community. Spring term: the adult as a learner, the teacher of adults, learning-teaching activities, administration of adult education programs. Evening. (Also offered 1953 summer term—Education 279 (3).)
- 281 *Group Procedures in Education** (3) Ruffner
Theory, practice, evaluation, and application to all educational levels. Evening.
- 285 *Extra-classroom Activities** (3) Root
Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contests; particular attention to sponsorship, participation, finance, and evaluation. Summer term 1953.
- 287-88 *Clinical Study of Reading Problems** (3-3) Coleman
For advanced students. Diagnostic work under supervision in the Reading Clinic. Prerequisite: 223-24 or the equivalent. Saturday morning.

* Prerequisite: adequate professional preparation.

289-90 *Reading Problems** (3-3)

Coleman

For advanced students. Study of the more severe reading difficulties encountered by classroom teachers. Prerequisite: Education 223-24 or the equivalent. 1954-55 and alternate years.

291X *Planning the School Plant* (3)

Hamon

Selection of site; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems. (Not offered in 1953-54.)

293-94 *Research* (3-3)

The Staff

Individual research under the guidance of a member of the Staff. Program and conferences arranged with an instructor.

295 *Educational Research Methods and Procedures* (3)

Fox

Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required. Evening. (Also offered 1953 summer term.)

Education 295X, same as 295, offered spring term. Late afternoon.

297 *Reading in Education*

The Staff

To assist those preparing for the comprehensive examination. No credit toward degree requirements. Tuition fee, \$15. Late afternoon. (Also offered 1953 summer term.)

Education 297X, same as 297, offered spring term. Late afternoon.

299-300 *Thesis* (3-3)

The Staff

Required of all Master of Arts candidates following Plan 1. Time to be arranged. (Also offered 1953 summer term.)

* Prerequisite: adequate professional preparation.

ELECTRICAL ENGINEERING

Norman Bruce Ames, M.S., E.E., LL.B., *Professor of Electrical Engineering, Executive Officer*

Forest Klaire Harris, Ph.D., *Professorial Lecturer in Electrical Engineering*

Thomas Alvin O'Halloran, B.S. in E.E., *Lecturer in Electrical Engineering*

Dwight Edward Shytle, *Lecturer in Electrical Engineering*

Malcolm Richardson Moore, B.E.E., *Lecturer in Electrical Engineering*

Ralph Brady, B.S. in E.E., *Lecturer in Electrical Engineering*

Jerome Addison Lee, B.S., *Lecturer in Electrical Engineering*

Benjamin Franklin Slingluff, B.S. in E.E., *Lecturer in Electrical Engineering*

Harold Valdemar Oerting, B.S. in E.E., *Lecturer in Electrical Engineering*

George Pida, B.E.E., *Lecturer in Electrical Engineering*

Claudius Edmund Bennett, E.E., *Lecturer in Electrical Engineering*

Kermit Milton Lovewell, B.S. in E.E., *Lecturer in Electrical Engineering*

William Herbert Gossard, A.B., M.S. in E.E., *Lecturer in Electrical Engineering*

George Abraham, M.S., *Lecturer in Electrical Engineering*

William Balwanz, B.E.E., M.S. in E.E., *Lecturer in Electrical Engineering*

Francis Lewis Hermach, B.E.E., *Lecturer in Electrical Engineering*

Bachelor of Electrical Engineering (School of Engineering).—See pages 124-26 and 127-28 for statement of requirements.

Master of Science in Engineering (School of Engineering).—See pages 131-32 for statement of requirements.

Electrical Engineer (School of Engineering).—See pages 132-33 for statement of requirements.

FIRST GROUP

9-10 *Elements of Electrical Engineering (3-3)* Ames, Lee
 Electrical Engineering 9: magnetic and electric circuits; direct-current instruments and machines; Electrical Engineering 10: alternating-current circuits, instruments, and machines. Prerequisite: Physics 7. Prerequisite or concurrent registration: Mathematics 20. Morning and evening sections.

SECOND GROUP

105-6 *Direct-Current Laboratory (2-2)* The Staff
 For the student majoring in electrical engineering. A course in meas-

- urements and direct-current dynamo laboratory. Prerequisite: Electrical Engineering 9-10. Laboratory fee, \$9 a term. Laboratory (3 hours)—afternoon and evening sections.
- 107 *Alternating-Current Circuits* (3) Ames, Lovewell
Alternating-current-circuit theory. Extensive consideration is given to harmonic analysis and to the study of harmonics in both single-phase and polyphase circuits. Prerequisite: Electrical Engineering 10. Morning and evening sections.
- 108 *Alternating-Current Machinery* (3) Ames
Transformers and polyphase induction motors. Prerequisite: Electrical Engineering 107. Morning and evening sections.
- 109 *Alternating-Current Machinery* (3) Ames, Bennett
Synchronous generators and motors, single-phase motors, converters, mercury arc rectifiers. Prerequisite: Electrical Engineering 108. Morning and evening sections.
- III-12 *Electrical Measurements* (2-2) Harris, Hermach
Theory of direct-current and alternating-current instruments, bridges, and meters. Prerequisite or concurrent registration: Electrical Engineering 107. Morning and evening sections.
- 115 *Advanced Network Theory I* (3) Balwanz
Theory of resonance, linear networks, transmission lines, and filters. Prerequisite: Electrical Engineering 107. Evening.
- 116 *Advanced Network Theory II* (3) Balwanz
Theory of transmission at UHF and VHF frequencies including Maxwell's equations, wave guides, and methods of power generation at these frequencies. Prerequisite: Electrical Engineering 115 and Physics 132. Prerequisite or concurrent registration: Physics 133. Evening.
- 123 *Advanced Network Laboratory I* (2) Gossard
A laboratory course associated with Electrical Engineering 115. Laboratory fee, \$9. Laboratory (3 hours)—evening.
- 124 *Advanced Network Laboratory II* (2) Gossard
A laboratory course associated with Electrical Engineering 116. Prerequisite: Electrical Engineering 123. Laboratory fee, \$9. Laboratory (3 hours)—evening.
- 129 *Symmetrical Components* (3) Slingluff
Theory and application of symmetrical components in unbalanced circuits, alternating-current machinery, and transmission lines. Prerequisite: Electrical Engineering 108. Evening.
- 130 *Principles of Electric Power Transmission* (3) Slingluff
Mechanical and electrical characteristics of transmission lines, approximate and rigorous solutions by means of hyperbolic functions, steady-state and elementary transient considerations, the more important phases of distribution of electrical energy. Prerequisite: Electrical Engineering 129. Evening.
- 133-34 *Alternating-Current Laboratory* (2-2) The Staff
A continuation of Electrical Engineering 105-6, with experiments on alternating-current circuits, instruments, and machinery. Prerequisite:

site: Electrical Engineering 106 and 108. Laboratory fee, \$9 a term. Laboratory (3 hours)—afternoon and evening sections.

- 138 *Industrial Electrical Power Applications* (2) Shytle
The characteristics of the various types of electrical motors and other power appliances and the principles governing their applications in industry. Prerequisite: Electrical Engineering 10. Evening.
- 139 *Illumination Engineering* (2) Oerting
Principles and practices in present-day illumination engineering. Prerequisite: Electrical Engineering 10. Evening.
- 140 *Electrical Design* (3) Bennett
Principles of design, with reference to materials of construction and electrical equipment. Practical exercises are assigned in connection with classroom work. Prerequisite: Electrical Engineering 109. Lecture (2 hours); laboratory (3 hours)—evening.
- 148 *Applications of Electronic Devices* (3) Gossard
Practical applications of electronic devices such as power supplies, voltage regulators, multivibrators, electronic counters, and servo-mechanism. Prerequisite: Physics 133. Evening.
- 150 *Electronic Devices Laboratory* (2) The Staff
A laboratory course associated with Electrical Engineering 148. Laboratory fee, \$9. Evening.
- 189-90 *Proseminar in Electrical Engineering* Abraham
(1-1)
Prerequisite: Electrical Engineering 108. Evening.

THIRD GROUP

- 201 *Radio Wave Propagation* (3)
Theory of the radiation and propagation of electromagnetic waves in space, with consideration of practical application to radio problems. 1953-54, evening.
- 202 *Microwave Electronics* (3) Balwanz
Behavior of vacuum tubes at ultra-high frequencies. Theory and applications of microwave oscillators and transmission circuits. Measurement problems. 1953-54, evening.
- 203 *Electric Circuit Analysis* (3)
Analysis of circuits under stationary and transient conditions by operational methods. Generality of the circuit concept. 1954-55, evening.
- 204 *Advanced Electrical Design* (3)
Advanced consideration of transformers, polyphase machines, and direct-current machinery with particular attention to design difficulties. 1954-55, evening.
- 206 *Electronic Circuit Problems* (3)
Design of low power electronic circuits, oscillators, receivers, vacuum tube counters and timers, amplifiers. 1954-55, evening.
- 299-300 *Thesis* (3-3) The Staff
Time to be arranged.

ENGLISH

Robert Whitney Bolwell, Ph.D., *Professor of American Literature*
 Ernest Sewall Shepard, A.M., *Professor of English Literature*
 George Winchester Stone, Jr., Ph.D., *Professor of English Literature*
 Fred Salisbury Tupper, Ph.D., *Professor of English Literature*
 Calvin Darlington Linton, Ph.D., *Professor of English Literature*
 Charles William Cole, Ph.D., *Professor of American Literature, Executive Officer*
 William Lewis Turner, Ph.D., *Associate Professor of English*
 Robert Hamilton Moore, Ph.D., *Associate Professor of English Composition*
 Averett Howard, A.M., *Associate Professor of English Composition*
 Muriel Hope McClanahan, Ph.D., *Associate Professor of English Composition*
 James Harold Coberly, Ph.D., *Associate Professor of American Literature*
 Martin Steele Day, Ph.D., *Assistant Professor of English*
 Phyllis Nichols Rowe, A.M., *Assistant Professor of English*
 Vera Lillian Mowry, Ph.D., *Assistant Professor of English*
 John Gage Allee, Jr., A.M., *Assistant Professor of English*
 Ruth Elsie Jones, A.M., *Assistant Professor of English Composition*
 Philip Ingram Herzbrun, A.B., *Instructor in English Composition*
 Raymond Howard Reno, A.M., *Instructor in English Composition*

Bachelor of Arts with a major in American Thought and Civilization (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60, which should include English 71-72, History 71-72, Art 71-72, and Philosophy 51-52.

Required: the general requirements stated on pages 75-80 and the grade "pass" on the American Thought and Civilization major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined is summarized under four general headings: (1) European culture—history—the Renaissance and modern social and intellectual cultures as a background to contemporary civilization with particular attention to English literature and history from the 16th through the 19th centuries; (2) American culture—the political, economic, social, and religious thought and experience of the American people; (3) American philosophy and fine arts—a survey of periods and movements with a knowledge of outstanding individuals; (4) American literature—a knowledge of major writers, together with a study of poetry, fiction, and drama. The Department of English provides a proseminar (English 170-8) intended to assist the student in preparing himself for the major examination. The major adviser will give to each student at registration a check list of available courses grouped as prerequisite, necessary, or desirable for the completion of the major study program.

Bachelor of Arts with a major in English Literature (Columbian College—Field-of-Study).

Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College described on page 60. It is recommended that prospective majors elect English 91-92 from among the listed offerings.

Required: the general requirements stated on pages 75-80, and the passing of the English Literature major examination at the end of the senior year. The field of coordinated knowledge upon which the student will be examined at the end of his senior year is summarized under the following general headings: (1) the history of English literature from the Anglo-Saxon period; (2) the chief English writers (a certain familiarity with each man and his main works and a detailed knowledge of Shakespeare); (3) English social and political history as it bears upon or is reflected in the literature; (4) European intellectual backgrounds and movements which have affected English literature. The proportion of work taken in each of these areas should be worked out by the student in consultation with one of the English Literature advisers. The Department of English provides a proseminar (English 199-200) to assist the student in preparing himself for the major examination. A detailed description of the major is available in the office of the Dean of Columbian College.

Master of Arts in the field of American Literary and Cultural History (Columbian College).—Prerequisite: the equivalent of an undergraduate major in this University in (1) History (with American history as a major part), (2) American Thought and Civilization, or (3) English Literature (with introductory courses in American literature and American history). The student who has not taken any of the above majors at this University must take a candidacy examination.

Required: in addition to the general requirements stated on pages 81-84, the following specific requirements must be met: twelve of the required credit hours must be of seminar study, six in American history and six in American literature; twelve of the required credit hours must be of second and third group courses in the fields of American history, literature, philosophy, education, and art recommended by the adviser; a thesis (six credit hours) in any of the foregoing fields or in some combination of them. Because of the various undergraduate majors which will be accepted for admission to this program, a basic reading list is assigned to all students, to assist in preparing them for the final Master's examination.

Master of Arts in the field of English and American Literature (Columbian College).—Prerequisite: an undergraduate major in English Literature, or American Thought and Civilization at this University; or twenty-four credit hours in English and/or American literature above the sophomore level. The student who has not taken either of the above majors at this University must take a candidacy examination. The student offering split preparation (English and American literature) will be examined in English and American literature.

Required: in addition to the general requirements stated on pages 81-84, the following specific requirements must be met: (1) a schedule of courses amounting to twenty-four credit hours, planned in consultation with the adviser; on the basis of the student's undergraduate preparation, to include a comprehensive survey of American literature and of English literature from 1600; (2) a Master's thesis (six credit hours) written upon an approved topic under the direction of the instructor in whose field the major portion of the material falls; (3) a final written examination, on American literature and on English literature from 1600.

Master of Arts in the field of English Literature (Columbian College).—Prerequisite: an undergraduate major in English Literature at this University, or twenty-four credit hours in English literature above the sophomore level. The student who has not passed the major examination in English at this University

must take a candidacy examination which, in its scope and difficulty, is comparable to the major English examination.

Required: in addition to the general requirements stated on pages 81-84, the following specific requirements must be met: (1) a schedule of courses amounting to twenty-four credit hours, planned in consultation with the adviser; (2) a Master's thesis (six credit hours) written upon an approved topic under the direction of the instructor in whose field the material falls; and (3) a final written examination.

Bachelor of Arts in Education with a teaching field in English (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the English option, page 152; and the professional courses listed on pages 155-56.

ENGLISH COMPOSITION

FIRST GROUP

A *English Practice* (3)

The Staff
Instruction, drill, and exercises in grammar, vocabulary, spelling, and mechanics in general; instruction and exercises in composition and reading. This course is designed to prepare students for English 1. To be arranged. (Also offered 1953 summer term.)

B *English for Foreign Students* (3)

Allee
A course in reading and writing designed to prepare the student for English 1. Special attention is given to spelling, syntax, grammar, idiom, and vocabulary. Morning and evening sections. (Also offered 1953 summer term.)

I *English Composition** (3)

Moore and Staff
Review of grammar, exercises in composition, readings. Morning and evening sections. (Also offered 1953 summer term.)
English 1x, same as 1, offered spring term. Morning and evening sections.

2 *English Composition** (3)

Moore and Staff
Exercises in composition, readings. The second term of the six-hour English Composition course required of all students. Morning and evening sections. (Also offered 1953 summer term.)
English 2x, same as 2, offered fall term. Morning and evening sections.

II *The Writing of Reports* (3)

Turner and Staff
Theory and practice in the writing of technical reports. Prerequisite: English 1. 2. Morning and evening sections. (Also offered 1953 summer term.)
English 11x, same as 11, offered spring term. Morning and evening sections.

* Before students are registered in English 1, they are tested in the minimum requirements in vocabulary, spelling, grammar, standard usage, and writing skill. Those students who are marked superior may, upon passing further tests, be exempted from one or both terms of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English 1A.

All students also are required to take two years of Junior College English with the sequence of English 1, both terms of one of the introductory literature courses, and English 2.

English 1 is prerequisite to all other courses in English.

SECOND GROUP

- 109 *Expository Writing* (3) Howard and Staff
A study of types of expository writing with weekly exercises. Prerequisite: English 1, 2. Morning.
- 110 *The Short Story* (3) Howard and Staff
Some study of the technique of the short story and class criticism of student writing. Prerequisite: English 1, 2. Morning.
English 110x, same as 110, offered fall term. Evening.
- 115 *The Writing of Fiction—the Short Story* (3) Howard
Prerequisite: English 110; consent of instructor. Evening.
- 116 *Advanced Exposition* (3) Moore
Theory and practice in the writing of expository articles and essays. Prerequisite: English 109; consent of instructor. Evening.
- 117-18 *The Writing of Fiction—the Novel* (3-3) Howard
Writing a novel. Prerequisite: English 110; consent of instructor. Evening.

ENGLISH LITERATURE

FIRST GROUP

- 51-52 *Introduction to English Literature** Stone and Staff
(3-3)
A historical survey. Prerequisite: English 1. Morning, afternoon, and evening sections. (Also offered 1953 summer term.)
- 91-92 *Introduction to European Literature** Shepard and Staff
(3-3)
Consideration of various types. Prerequisite: English 1. Morning and evening sections. (Also offered 1953 summer term—English 91 (3).)

SECOND GROUP *

- 121-22 *English Literature from the Beginnings to 1500* (3-3) Allee
Fall term, English literature prior to Chaucer; spring term, Chaucer. Evening.
- 125 *The Evolution of Modern Speech* (3) Allee
The development of the English language in a historical treatment of English grammar. (Not offered in 1953-54.)
- 126 *The Appreciation of Literature* (3) Stone
The study of the principles of criticism and their application to various literary types. (Not offered in 1953-54.)

* All students who are required to take two years of Junior College English will follow the sequence of English 1, both terms of one of the introductory literature courses, and English 2.
English 51-52, 71-72, 91-92; or Classical Languages and Literatures 71-72 is prerequisite to all second group courses except English 125 and 126.

- 129-30 *Elizabethan Nondramatic Literature* (3-3) Tupper
Nondramatic literature from 1485 to 1603. (English 129 not offered in 1953-54.)
English 130x, same as 130, offered fall term. Morning.
- 135-36 *Shakespeare* (3-3) Tupper
Evening. (Also offered 1953 summer term—English 136 (3).)
- 139-40 *The Seventeenth Century* (3-3) Linton
First half, poetry and prose from 1603 to 1660; second half, Milton. Morning.
- 141-42 *The Neoclassical Movement* (3-3) Stone
Poetry and prose from 1660 through the mid-eighteenth century. Evening.
- 151-52 *The Romantic Movement* (3-3) Day
From the mid-eighteenth century through Shelley and Keats. Evening.
- 161-62 *Victorian Literature* (3-3) Shepard
Poetry and prose from 1830 to 1900. Morning.
- 165-66 *The Twentieth Century* (3-3) Linton
British poetry, prose, and drama since 1900. Morning. (Also offered 1953 summer term—English 165 (3).)
- 181-82 *The English Novel* (3-3) Day
Major English novelists from Richardson to Woolf. Morning.
- 183-84 *The English Drama* (3-3) Tupper
The first half is concerned principally with the drama of Shakespeare's contemporaries. The second half is a historical survey from 1660 to the present day. (English 184 not offered in 1953-54. Summer term 1953—English 183 (3).)
English 183x, same as 183, offered spring term. Morning.
- 199-200 *Proseminar: Readings for the English Literature Major* (3-3) Tupper, Stone
Conferences and group discussions. Afternoon and evening sections.

THIRD GROUP

- 222x *The Age of Chaucer* (3) Stone
Evening.
- 223-24 *Old English* (3-3) Allee
English language and literature before 1100. Fall term. Old English grammar and readings; spring term, Beowulf. (Not offered in 1953-54.)
- 235-36 *Studies in Shakespeare and His Contemporaries* (3-3) Tupper
Prerequisite: English 135-36. Evening.

- 239-40 *Seminar: The Seventeenth Century* (3-3) Linton
First half, chief figures exclusive of Milton; second half, Milton.
(English 239 not offered in 1953-54.) English 240, evening.
- 241-42 *Studies in Neoclassical Literature* (3-3) Stone
Prerequisite: English 141-42. (Not offered in 1953-54.)
- 244 *Studies in Eighteenth Century Drama* (3) Stone
(Not offered in 1953-54.)
- 251-52 *Studies in the Romantic Movement* (3-3) Day
Prerequisite: English 151-52.
Summer term 1953—English 251 (3).
- 261-62 *Studies in Victorian Literature* (3-3) Shepard
Prerequisite: English 161-62. Evening.
- 295-96 *Studies in the History of English Literary Criticism* (3-3) Shepard
Open to the undergraduate with the approval of the instructor. (Not offered in 1953-54.)
- 299-300 *Thesis* (3-3) The Staff

AMERICAN LITERATURE

FIRST GROUP

- 71-72 *Introduction to American Literature** (3-3) Bolwell and Staff
A historical survey. First half: from the beginnings to the Civil War. Second half: from Civil War to the present day. Prerequisite: English 1. Morning and evening sections. (Also offered 1953 summer term.)

SECOND GROUP *

- 171-72 *Studies in American Literature* (3-3) Cole
Major factors in the national cultural tradition as shown by outstanding writers. Prerequisite: English 51-52 or 71-72. Morning.
- 173-74 *Major American Poets* (3-3) Coberly
Advanced critical study of significant writers and movements. First half: from beginnings through nineteenth century. Second half: the twentieth century. Evening.
- 175-76 *American Drama* (3-3) Bolwell, Cole
Historical and critical study of significant plays and forms. First half: from beginnings through nineteenth century. Second half: the twentieth century. Evening. (Also offered 1953 summer term—English 175 (3).)

* All students who are required to take two years of Junior College English will follow the sequence of English 1, both terms of one of the introductory literature courses, and English 2.
English 51-52, 71-72, 91-92; or Classical Languages and Literatures 71-72 is prerequisite to all second group courses except English 171-72.

- 177-78 *American Fiction* (3-3) Coberly
 Historical and critical study of significant novels and short stories.
 First half: from beginnings through nineteenth century. Second half:
 the twentieth century. Morning.
- 179-80 *Proseminar: Readings for American Thought and Civilization Major* (3-3) The Staff
 Conferences and group discussions. To be arranged.

THIRD GROUP

- 271-72 *Seminar: American Literature* (3-3) Bolwell
 Prerequisite: English 171-72 or the equivalent. Evening.
- 277-78 *Studies in American Fiction* (3-3) Coberly
 Topic: Nineteenth Century Transcendentalism. Prerequisite: English
 177-78 or the equivalent. Open to the undergraduate with the ap-
 proval of the instructor. Evening.
- 279-80 *Thesis* (3-3) The Staff

RELATED COURSES IN OTHER DEPARTMENTS

- Classical Languages and Literatures 71-72, *Greek and Roman Backgrounds in Literature*
- Classical Languages and Literatures 109, *Greek and Latin in Current English*
- Classical Languages and Literatures 110, *Greek and Roman Selected Plays*
- Education 136, *Teaching English*
- History 151-52, *English History*
- Philosophy 111-12, *History of Philosophy*

GEOGRAPHY

Robert Dale Campbell, Ph.D., *Professor of Geography, Executive Officer*

_____, *Assistant Professor of Geography*

_____, *Instructor in Geography*

Bachelor of Arts, with a major in Geography (Columbian College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Electives must include Geography 51 and 52. Required: in addition to the general requirements as stated on pages 75–80, twenty-four credit hours of Geography (which must include Geography 103–4, 113, and 114) beyond first-group courses; fifteen credit hours in one or more of the following departments: Botany, Geology, Economics, History, or Political Science. Strongly recommended: Botany 1 and 2, Economics 1–2, and History 71–72.

Master of Arts in the field of Geography (Columbian College).—Prerequisite: a Bachelor of Arts degree with a major in Geography from this University, or the equivalent. Required: the general requirements as stated on pages 81–84. The thirty hours of required work must include Geography 201–2 and 200–370.

Bachelor of Arts in Education with a teaching field in Geography (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the Geography option, pages 152–53 and the professional courses listed on pages 155–56.

FIRST GROUP

51 *Introduction to Geography* (3) Campbell

A study of the attributes of place; patterns and associations of physical and cultural earth-features; the systematic appraisal of earth-man relationships. Morning. (Also offered 1953 summer term.)

Geography 51x, same as Geography 51, offered spring term. Evening.

52 *World Regions* (3) Campbell

A study of the character of regions; description and interpretation of physical-cultural complexes; evaluation of regional differences as they affect the distribution and activities of man. Morning.

Geography 52x, same as Geography 52, offered fall term. Evening.

71–72 *Political Geography of the United States* (3–3) Koenig

A consideration of the interplay between geographic and political factors and the extent to which they determine the administrative policies of governments. Morning. (Also offered 1953 summer term—Geography 72 (3).)

SECOND GROUP

†103–4 *Cartography* (3–3)

Principles of cartographic drafting; elementary map projections; map and graph planning, design, and construction; uses and interpretation of maps. Prerequisite: Geography 51 and 52. Laboratory fee, \$6 a term. Lecture (2 hours); laboratory (2 hours)—morning and evening sections.

- 113 *Geomorphology* (3) Campbell
The nature and evolution of earth forms, with special emphasis upon relief features of North America. Prerequisite: Geography 52. Lecture (2 hours); laboratory or field (2 hours)—afternoon.
- 114 *Weather and Climate* (3) Campbell
Rudimentary atmospheric physics, air mass and frontal weather analysis, regional climatology. Prerequisite: Geography 52. Lecture (2 hours); laboratory or field (2 hours)—morning.
- 125 *Trade and Transportation* (3)
The influence of geographic factors on the forms of transportation and upon trade routes. Prerequisite: Geography 51. 1953-54 and alternate years, evening.
- 126 *Strategic Materials* (3)
Location and utilization of raw materials essential to modern technology; position of the United States with regard to such materials. 1954-55 and alternate years.
- 127 *Industrial Geography* (3)
Location and distribution of significant industries, and analysis of the geographic factors determining both; internal structure and external relationships of specific industries.
Summer term 1953.
- 128 *Agricultural Geography* (3)
Analysis of types and distribution of agricultural practices; crop ecology; character of predominantly agricultural economies. 1954-55 and alternate years.
- 131 *Conservation of Natural Resources* (3)
Principles and problems of conservation of vital natural resources: soils, water, forests, minerals, fuels, wildlife. Prerequisite: Geography 51. 1953-54 and alternate years, evening.
- 132 *Land Use* (3)
Principles of geographic area analysis and land planning. Field trips and field problems. Prerequisite: Geography 51 and 52. 1954-55 and alternate years.
- 141 *Geography of Settlement* (3)
The study of the nature and form of settlement, and of population trends and patterns. Prerequisite: Geography 51. 1954-55 and alternate years.
- 142 *Urban Geography* (3)
The study of the location, form, and function of cities. Prerequisite: Geography 51. 1954-55 and alternate years.
- 161 *Geography of Soils* (3)
The physical nature, development, and world distribution of soils, and land use, current and future soil problems. Prerequisite: Geography 51 and 52. 1954-55 and alternate years.
Summer term 1953.

162 *Geography of the Oceans* (3)

Physical and cultural aspects of the oceans and their coasts. Rudimentary physical oceanography and marine ecology. Influence of the oceans on economic and political development of adjacent areas. (Not offered in 1953-54.)

171-72 *Field Geography* (3-3)

Field study methods, training in mapping and analysis techniques for both rural and urban areas. Prerequisite: Geography 51 and 52. Surveying fee, \$15 a term. (Not offered in 1953-54.)

174 *Map Interpretation* (3)

Map elements and map uses; map reading; interpretation and evaluation of maps. (Not offered in 1953-54.)

181 *Anglo-America** (3)

1954-55 and alternate years.

183 *Northwest Europe** (3)

1954-55 and alternate years.

184 *Mediterranean Region** (3)

1954-55 and alternate years.

185 *Africa** (3)

Summer term 1953.

191 *Middle America** (3)

1953-54 and alternate years, evening.

192 *South America** (3)

1953-54 and alternate years, evening.

195 *Eastern and Southeastern Asia** (3)

1953-54 and alternate years, morning.

196 *Southwestern Asia and Soviet Union** (3)

1953-54 and alternate years, evening.

198 *Australia and the Pacific** (3)

1954-55 and alternate years.

THIRD GROUP ‡

201-2 *Seminar: History and Philosophy of Geography* (3-3)

Time to be arranged.

231-32 *Seminar in Geography* (3-3)

The Staff

Subjects of immediate interest, for students of geography and professional geographers in the Washington area. (Not offered in 1953-54.)

* Regional survey. No prerequisite.

‡ Senior major or graduate status is required in any third-group course.

251-52 *Seminar: Problem Areas of the
Middle East (3-3)*
Evening.

Campbell

295-96 *Research (3-3)*
Special directed studies. Time to be arranged.

The Staff

299-300 *Thesis (3-3)*
Time to be arranged. (Also offered 1953 summer term.)

The Staff

GEOLOGY

_____, *Associate Professor of Geology*

_____, *Instructor in Geology*

Bachelor of Arts with a major in Geology (Columbian College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Required: in addition to the general requirements as stated on pages 75-80, at least twenty-four of the required sixty credit hours must be in Geology beyond the first-group courses.

Master of Arts in the field of Geology (Columbian College).—Prerequisite: a Bachelor of Arts degree with a major in Geology at this University, or the equivalent. Required: the general requirements as stated on pages 81-84.

FIRST GROUP

5 *Field Geology* (6)

Field trips to neighboring localities of geological interest, with classroom study. (Not offered in 1953-54.)

21-22 *Physical and Historical Geology* (3-3)

Survey course covering the principles of physiography, geology, and mineralogy. (Not offered in 1953-54.)

SECOND GROUP

121-22 *Paleontology* (3-3)

Lectures and laboratory work on classification and structure of fossil invertebrates, vertebrates, and plants, including their use as guide fossils in stratigraphic geology. (Not offered in 1953-54.)

123-24 *Regional Geology of North and South America* (3-3)

Lectures and map work on the physiographic regions of the Western Hemisphere, stressing the relationship between geology and geography and culture. (Not offered in 1953-54.)

125-26 *Regional Geology of the Eastern Hemisphere* (3-3)

Alternating with Geology 123-24 and with it completing a survey of the world. (Not offered in 1953-54.)

THIRD GROUP

215-16 *Seminar* (3-3)

Detailed study and presentation by the class and instructor of some phase of geology with review of current literature. (Not offered in 1953-54.)

227-28 *Research* (arr.)

Original work on individual problems, including a digest of the published record. (Not offered in 1953-54.)

299-300 *Thesis* (3-3)

(Not offered in 1953-54.)

GERMANIC LANGUAGES AND LITERATURES

Gretchen Louisa Rogers, Ph.D., *Associate Professor of German*
 Wolfram Karl Legner, Ph.D., *Associate Professor of German, Acting Executive Officer*

Bachelor of Arts with a major in Germanic Languages and Literatures (Columbian College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Required: in addition to the general requirements as stated on pages 75–80, a minimum of twenty-four credit hours must be in German beyond first-group courses.

Master of Arts in Germanic Languages and Literatures (Columbian College).—Prerequisite: a Bachelor of Arts degree with a major in Germanic Languages and Literatures from this University, or the equivalent. Required: the general requirements as stated on pages 81–84. The thirty hours of required work must include a thesis in the field of German literature or linguistics.

Bachelor of Arts in Education with a teaching field in German (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the German option, page 153, and the professional courses listed on pages 155–56.

FIRST GROUP

- †1–2 *First-year German* (3–3) Rogers, Legner, and Staff
 The essentials of German grammar; translation of easy prose. Morning and evening sections. (Also offered 1953 summer term.)
- †3–4 *Second-year German* (3–3) Rogers, Legner, and Staff
 Selections from modern German prose; review of grammar. Prerequisite: German 1–2 or two years of high school German. Morning and evening sections. (Also offered 1953 summer term.)
- †9–10 *Conversation and Composition* (3–3) Rogers
 Prerequisite: German 3–4 or the equivalent. Morning.
- †51–52 *Introduction to German Literature* Legner, Rogers
 (3–3)
 Morning.

SECOND GROUP

- †103–4 *Goethe's "Faust"* (3–3) Legner
 1954–55 and alternate years.
- 107 *German Readings for Non-major Students** Legner
 Designed primarily for graduate students preparing for reading examinations. Undergraduates admitted with the permission of the instructor. No academic credit for graduate students. Three hours credit for undergraduates. Evening.
 German 107x, same as 107, offered spring term. Evening.

* Tuition fee, \$45.

- 131-32 *German Literature of the Eighteenth and Nineteenth Centuries* (3-3) Rogers

The Period of Enlightenment, "Storm and Stress", classicism, romanticism, and realism. 1953-54 and alternate years. Evening.

- 133 *Modern German Drama* (3) Rogers
1954-55 and alternate years.

- 134 *Modern German Fiction* (3) Rogers
1954-55 and alternate years.

THIRD GROUP

- †201-2 *Middle High German* (3-3) Legner
Evening.

HISTORY

Elmer Louis Kayser, Ph.D., LL.D., *Professor of European History*
 Wood Gray, Ph.D., *Professor of American History, Executive Officer*
 Howard Maxwell Merriman, Ph.D., *Professor of American Diplomatic History*

Myron Law Koenig, Ph.D., *Professor of American History*
 William Columbus Davis, Ph.D., *Professorial Lecturer on Latin American History*

*Roderic Hollett Davison, Ph.D., *Associate Professor of European History*

Ronald Bettes Thompson, A.B., *Assistant Professor of European History*
 Richard Catlin Haskett, Ph.D., *Assistant Professor of American History*

Bachelor of Arts with a major in History (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Electives must include History 39-40 and 71-72.

Required: the general requirements as stated on pages 75-80 and the grade of "pass" on the History major examination at the end of the senior year.

The major, centered on the study of the rise, development, and spread, and the continuing challenges of Western civilization, is attested by a major examination. Under the guidance of an adviser the student will arrange his program in History to attain a balanced coverage of (1) the rise of civilization in Europe to the eve of the French Revolution, (2) the spread of Western culture throughout the world since the close of the fifteenth century, (3) the historic problems of modern industrial civilization from the beginnings of the Industrial Revolution, and (4) the relations of the major nations of Europe and America in their world setting since the Napoleonic Wars. A six-hour research seminar to give training in fundamental techniques is a required part of each major's program, and a proseminar (History 199-200) is offered as a means of integrating the student's understanding of the continuity of Western civilization. For details relating to the administration and content of the major, see the pamphlet on this subject, which is available in the offices of the Dean of Columbian College and the Executive Officer of the History Department.

Master of Arts in the field of History (Columbian College).—Prerequisite: the degree of Bachelor of Arts with a major in History from this University, or the equivalent, and the approval of the Department.

Required: the general requirements for the degree, as stated on pages 81-84. Of the twenty-four credit hours of required second- and third-group courses (exclusive of the thesis), at least six must be in third-group history courses; a maximum of six may be in a closely related field outside the Department of History as approved by the Department. Master's candidates are responsible for arranging with instructors of second-group courses for extra work, in order to receive graduate credit for such courses.

Bachelor of Arts in Education with a teaching field in History (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the History option, page 153, and the professional courses listed on pages 155-56.

* On leave of absence 1953-54.

FIRST GROUP

- 39-40 *The Development of European Civilization* (3-3) Kayser, Thompson

Primarily for freshmen. Fall term: the political, social, economic, and cultural history of the Old World from ancient times to 1648. Spring term: from 1648 to the present. Morning and evening sections. (Also offered 1953 summer term.)

- 71-72 *The Development of the Civilization of the United States* (3-3) Koenig, Haskett

Primarily for sophomores. Fall term: the political, social, economic, and cultural forces of the United States in their world setting from 1492 to 1865. Spring term: from 1865 to the present. Morning and evening sections. (Also offered 1953 summer term.)

SECOND GROUP *

- 109 *Thought and Culture of the Western World I: Ancient Civilization* (3) Kayser

Intellectual and social awakenings in the Near East, Greece, and Rome; classical art, letters, philosophy, and science. (Not offered in 1953-54.)

- 110 *Thought and Culture of the Western World II: the Middle Ages and the Renaissance* (3) Kayser

Christian thought from Augustine to Thomas Aquinas; humanism and the classical revival, rise of vernacular literatures, the fine arts. (Not offered in 1953-54.)

- 119 *Thought and Culture of the Western World III: from the Reformation through the Age of Reason* (3) Kayser

The growth of Protestant polity and doctrine; the Counter-Reformation; the scientific revival; rationalism and the Enlightenment; arts and letters. Morning.

- 120 *Thought and Culture of the Western World IV: Intellectual Aspects of the Modern Age* (3) Kayser

The evolution of democratic and social concepts; liberalism and authoritarianism in religion and in politics; the impact of modern science and technology; romanticism and realism. Morning.

- 130 *Nationalism* (3) Kayser

The historical evolution of modern nationalism. Summer term 1953.

- 145-46 *Russian History* (3-3) Thompson

Fall term: the growth of Russia, 862-1900, with emphasis on the 19th century; spring term: 20th century Russia in its liberal, revolutionary, and totalitarian phases. Morning.

* History 39-40 is prerequisite to courses 109 through 132 and 193 through 196; History 71-72, to courses 163 through 184.

- 147 *Economic History of Europe* (3) Gray
A survey from ancient times to the present day. Evening. (Also offered 1953 summer term.)
- 148 *Oversea Expansion of Europe* (3) Merriman
International rivalries and the impact of European civilization in Africa and the Pacific basin since 1500, with emphasis on the nineteenth and twentieth centuries. (Not offered in 1953-54.)
- 149-50 *European Diplomatic History* (3-3)
Background of the European state system and of diplomatic practices and relations since the Congress of Vienna, with emphasis on the policies and actions of the great powers and their statesmen. Fall term: to 1871; spring term: since 1871. Evening.
- 151-52 *English History* (3-3) Haskett
A general survey of the development of political, social, and economic institutions of lasting significance in the English speaking world. Fall term: to 1689; spring term: since 1689. Morning. (Also offered 1953 summer term—History 152 (3).)
- 163 *Latin American History: Colonial Period* (3) Davis
Political, economic, social, and institutional developments in Spanish and Portuguese America from the conquest through the wars of independence. (Not available to students who have received credit for History 161.) Evening.
- 164 *South America since Independence* (3) Davis
Development of the independent South American states in the 19th and 20th centuries. (Not offered in 1953-54.)
- 166 *Mexico and the Caribbean since Independence* (3) Davis
A survey of the republics of Mexico, Central America, and the Caribbean islands. (Not available to students who have received credit for 162). Evening. (Also offered 1953 summer term.)
- 171-72 *Social History of the United States* (3-3) Gray
Daily life, institutions, intellectual and artistic achievements of the Agrarian Era, 1607-1861; and the Urban-Industrial Era, 1861 to the present time. Morning.
- 173 *Representative Americans* (3) Gray
A biographical approach to national history. Some fifty significant and pivotal personalities in the development of the United States in government, business, science, religion, journalism, the arts, and social reform. Evening. (Also offered 1953 summer term.)
History 173x, same as 173, offered spring term. Morning.
- 174 *Economic History of the United States* (3) Gray
Main trends in the development of American agriculture, industry, and trade since 1607, with emphasis on tendencies and problems since the Civil War. Evening. (Also offered 1953 summer term.)
- 175-76 *Political and Constitutional History of the United States* (3-3) Haskett
The programs and conflicts of group interests in America within the legal and political framework. Fall term: to the eve of the Civil War;

spring term: the Civil War to 1940. History 175, morning; History 176, morning and evening sections. (Also offered 1953 summer term—History 175 (3).)

177 *The South* (3)

Gray

Rise of the plantation system and slavery; the intersectional conflict; and the problems and progress of the New South. Morning.

181-82 *Diplomatic History of the United States*
(3-3)

Merriman

Tendencies toward isolation, expansion, and collectivism; disputes with foreign countries and their settlement; and the activities of the American secretaries of state and diplomatic agents. Fall term: to 1871; spring term: since 1871. Morning and evening sections.

183 *Oversea Expansion of the United States* (3)

Merriman

The political, economic, social, and cultural life of our outlying possessions. Morning.

184 *Canada and the United States* (3)

Merriman

The historical background and main trends in the relationship of the two English-speaking peoples of North America. Morning.

191-92 *Current History* (1-1)

Kayser

Contemporary events in their world setting. Afternoon.

193 *History of the Near East* (3)

Davison

The Byzantine, Arab, and Islamic backgrounds of Near Eastern history; the rise and decline of the Ottoman Empire; the action of European powers in the area; and the Ottoman breakup into the Turkish Republic and other successor states. (Not offered in 1953-54.)

195-96 *History of the Far East* (3-3)

Thompson

Fall term: the civilizations of China, India, and Japan from the beginnings to 1500 A.D. Spring term: the modern Orient under the impact of the West since 1500. Afternoon.

199-200 *Proseminar: Reading for the History*
Major (3-3)

The Staff

Limited to majors in History. Readings and discussions on main trends in the history of Western civilization, including representative selections from the classics of historical literature. Evening. (Also offered 1953 summer term.)

THIRD GROUP *

241-42 *Conference Seminar in Recent European*
Diplomatic History† (3-3)
(Not offered in 1953-54.)

* Approval of the instructor is required for registration in each third-group course.
† Primarily for Master's candidates in the School of Government.

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| 244 | <i>Reading Course in Modern European History (3)</i>
Primary for graduate students. (Not offered in 1953-54.) | Davison |
| 246 | <i>Seminar in Russian and Far Eastern History (3)</i>
Evening. | Thompson |
| 247 | <i>Reading Course in Russian and Far Eastern History (3)</i>
Primarily for graduate students. (Not offered in 1953-54.) | Thompson |
| 249 | <i>Seminar in European Diplomatic History (3)</i>
Evening. | Thompson |
| 261-62 | <i>Seminar in Latin American History (3-3)</i>
Evening. | Davis |
| 275 | <i>Seminar in American Political and Constitutional History (3)</i>
Evening. | Haskett |
| 278 | <i>Seminar in the History of the South (3)</i>
Evening. | Gray |
| 281-82 | <i>Seminar in the Diplomatic History of the United States (3-3)</i>
Afternoon. | Merriman |
| 287 | <i>Conference Seminar on the Development of the Foreign Policy of the United States* (3)</i>
(Not offered in 1953-54.) | |
| 291-92 | <i>Seminar (3-3)</i>
Prerequisite: approval of the Department. (Also offered 1953 summer term.) | The Staff
to be arranged. |
| 294 | <i>Seminar in the History of the Modern Near East (3)</i>
Evening. (Not offered in 1953-54.) | Davison |
| 299-300 | <i>Thesis (3-3)</i>
Required of all candidates for the Master's degree specializing in history. Time to be arranged. (Also offered 1953 summer term.) | The Staff |

* Designed primarily for Master's candidates in the School of Government.

HOME ECONOMICS

Frances Kirkpatrick, A.M., *Professor of Home Economics, Executive Officer*

Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*

*Bachelor of Science with a major in Home Economics (School of Education).—*Prerequisite: Home Economics curriculum in the Junior College, see pages 62-63. The requirements for the degree are stated on pages 146 and 147.

*Bachelor of Arts in Education with a teaching field in Home Economics (School of Education).—*Prerequisite: the Education curriculum on page 62. For requirements, see special bulletin.

FIRST GROUP

- 1 *Food Selection and Preparation (3)* Kirkpatrick
Composition, selection, and preparation of food; analysis of recipes; standard products; planning, preparing, serving, and estimating the cost of meals. Material fee, \$15. Morning.
- 22 *Clothing: Its Selection, Cost, and Care (3)* Towne
Clothing selection—the economic, aesthetic, and hygienic aspects; the application of the principles of color and design to individual selection; the care of clothing. Morning.
- 51 *Family Meals (3)* Kirkpatrick
The choice, purchase, preparation, and service of foods; dietary standards, food habits, and the nutritional needs of the family; problems of purchasing, care, and use of food by the consumer. Material fee, \$9. Evening.
- 53x *Family Health and Household Sanitation (3)* Kirkpatrick
Home hygiene and home care of the sick; the principles of household sanitation in relation to health and diseases. Material fee, \$6. Morning.
- 62 *Clothing Construction (3)* Towne
Techniques of construction suitable for cotton, wool, and rayon fabrics; the use of commercial patterns and their alteration; the proper selection of color, design, and fabric. Material fee, \$6. Morning.
Home Economics 62x, same as 62, offered fall term. Afternoon.
- 71 *Costume Design and Fashion Economics (3)* Towne
Factors determining fashions and effect on cost of clothing; problems of the consumer of textiles and clothing; historic costume and its relation to modern dress. Material fee, \$6. Morning.
- 72x *Household Textiles (3)* Towne
Properties, uses, and tests of the different textile fibres and fabrics, and development of judgment and knowledge of standard for the

consumer of clothing and house-furnishing material. Material fee, \$6. Morning.

77 *Marketing* (3)

Purchasing of foods as it relates to the home and to the institution. (Not offered in 1953-54.)

SECOND GROUP

102 *Advanced Food Preparation* (3)

The application of the fundamental processes of food preparation to a wider range of food materials and various services for different occasions. Material fee, \$15. Morning. Kirkpatrick

106 *Quantity Cookery* (3)

(Not offered in 1953-54.)

The Staff

123x *Household Finance and Problems of the Consumer* (3)

Economic problems of the family in modern industrial society; family income; income apportionment and household expenditures; laws affecting the home; investments; consumer buying. Evening. Towne

143 *Advanced Clothing Construction* (3)

Problems of clothing construction, including renovation, flat pattern designing. Material fee, \$6. Evening. Towne

148 *Food Problems* (3)

Factors affecting the preparation of standard products from the experimental viewpoint; principles of food demonstrations. Material fee, \$15. Afternoon. Kirkpatrick

152x *Nutrition* (3)

Lecture course on the principles of normal and abnormal human nutrition. Laboratory work on the calculation and preparation of dietaries. Laboratory fee, \$6. Morning. Kirkpatrick

154 *Diet Therapy* (3)

Study of nutrition as applied to diet and disease. Material fee, \$6. (Not offered in 1953-54.)

164 *Child Nutrition* (3)

Basic principles in nutrition and growth of the infant, pre-school, and adolescent child in health and disease. (Not offered in 1953-54.) Kirkpatrick

168 *Institutional Management* (3)

Study of the organization, equipment, and marketing problems of institutions. (Not offered in 1953-54.) Towne

171 *House Furnishing* (3)

Home planning from the historic, artistic, economic, and sanitary viewpoints; home furnishings such as linens, dishes, floor covering, mattresses, etc. Material fee, \$3. Afternoon. Kirkpatrick

181x *The Child in the Home* (3)

Care and development of children; parent-child relationships. Evening. Kirkpatrick

- 192 *The Home, Its Management and Equipment* (3) Kirkpatrick
Economical management of the home; distribution of time and energy; problems in the selection, arrangement, and care of equipment. (Not offered in 1953-54.)
- 193 *Supervision of Home Management* (3) The Staff
Field work under supervision. Designed to meet requirements of those preparing to teach in federally-aided schools. Time to be arranged.
- 195-96 *Special Problems* (3-3) The Staff
Individual investigation or study under the guidance of a member of the staff. Suggested problems are: home economics education, marketing, tailoring, and draping. Program and conferences arranged with an instructor. Morning.
- 197-98 *Proseminar* (3-3) Kirkpatrick
The study of the most recent materials and problems in the various phases of home economics. Evening.

JOURNALISM

Elbridge Colby, Ph.D., *Professor of Journalism, Executive Officer*
 Robert Crumpton Willson, A.B., *Assistant Professor of Journalism*
 Joseph Marshall Mathias, A.B., LL.B., *Lecturer in Journalism*
 William Vance Nessly, *Lecturer in Journalism*
 Robert Earl Harper, A.B., *Lecturer in Journalism (Public Relations)*
 Franklin John Ehler, *Lecturer in Journalism*
 Joseph Paull, A.B., LL.B., *Lecturer in Journalism*
 Lawrence George Hauck, A.B., *Lecturer in Journalism*
 Eugene Ingold, B.S., *Lecturer in Journalism*

SEMINAR LECTURERS

Richard Hollander, Managing Editor, *The Washington Daily News*,
Professorial Lecturer in Journalism
 James Russell Wiggins, Managing Editor, *The Washington Post*, *Professorial Lecturer in Journalism*
 Paul Wooten, Correspondent, *The New Orleans Times-Picayune*, *Professorial Lecturer in Journalism*

Bachelor of Arts with a major in Journalism (Columbian College—Departmental):

In the field of News-Editorial.—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Electives must include Journalism 71-72 and 81-82. Required: the general requirements as stated on pages 75-80. Of the sixty hours of required courses in Columbian College a minimum of eighteen must be in second-group Journalism courses including 115, 147, 151, and 198. It is recommended that electives in the Junior College be selected from the following: Economics 1-2, English 71-72, History 71-72, Political Science 9-10, Psychology 1, Sociology 1-2, 71-72; and in Columbian College from the following: Business Administration 147; English 171-72, 177-78; Geography 71-72; History 171-72, 174, 181-82, 191-92; Philosophy 172; Psychology 156; Speech 109.

In the field of Public Relations.—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Electives should include Economics 1-2; History 71-72; Journalism 71-72 and 81-82; Psychology 1; and Speech 1, 2. Required: the general requirements as stated on pages 75-80. The sixty hours of required courses in Columbian College must include the following: Journalism 143, 144, 145, 146, and such courses in Business Administration, English, History, Psychology, and Speech, as are selected upon the advice of the Journalism Department. It is recommended that Columbian College electives be selected from the following: Business Administration 151, 195, 147; English 11; History 174; Journalism 121, 151; Psychology 2, 144, 151, 156; Speech 109, 131, 148. In exceptional cases changes from the required and recommended courses may be permitted with the approval of the Journalism Department.

FIRST GROUP

71-72 *Journalism Survey (3-3)*

The newspaper and society; survey of character, techniques, and content of leading newspapers; history of American journalism. It is

recommended that English 71-72 or History 71-72 be taken in conjunction with this course. Morning and evening sections.

- 81-82 *Reporting (3-3)* Paull, Ingold
Techniques of newspaper reporting, instruction and practice in modern methods of gathering and presenting news. Some knowledge of typing is desirable. Prerequisite: English 1, 2 or the equivalent. Laboratory fee, \$6 a term Morning and evening sections.

SECOND GROUP

- 115 *Newspaper Copy Editing and Make-up (3)* Nessly
Editing of news prior to publication, the copy desk, head lines, make-up, the city editor and his functions. Prerequisite: Journalism 81-82 or the equivalent, unless taken concurrently. Saturday morning.
- 121-22 *Feature Writing (3-3)* Willson
Instruction and practice in writing of special newspaper and magazine articles for sale, material for which is obtained through interviews and independent investigation. Prerequisite: English 1, 2 or the equivalent. Journalism 121, evening. (Journalism 122 not offered in 1953-54.)
Journalism 121x, same as 121, offered spring term. Morning.
- 142 *Retail Newspaper Advertising (3)* Ehlert
Retail newspaper advertising management, coordination of newspaper advertising with retail sales patterns, advertising readership, copy preparation, production methods. Prerequisite: Business Administration 147 or permission of the instructor. Evening.
- 143 *General Editing for Publication (3)* Willson
Editing procedures and techniques, including copy editing, proof reading, revision of manuscripts, preparation of specialized and technical materials, illustrative charts and graphs, and picture editing. Intended for students preparing for trade publications and public relations work rather than newspaper work. Saturday morning.
- 144 *Technical Editing for Publication (3)* Willson
Editing procedures and techniques, including introduction to graphic arts processes; planning; designing; and making layouts for magazines, booklets, brochures, catalogues, and all printed materials except newspapers. Saturday morning.
- 145 *Principles of Public Relations (3)* Harper
The press and information office, technique of news releases, public addresses as news, promotion of feature material, the problem of public relations in government agencies and commercial establishments. Saturday morning.
- 146 *Problems in Public Relations (3)* Harper
Case histories of successful public relations programs, discussion of public relations procedures and ethics, preparation of specific public relations projects. Prerequisite: Journalism 145. Saturday morning.

147 Reporting of National Affairs (3)

Hauck

Training in the coverage and presentation of national news with special attention to Washington correspondence and press association reporting. Afternoon.

151-52 Editorial Writing (3-3)

Colby

Current events from the standpoint of editorial interpretation, instruction and practice in the writing of editorials and columns on public affairs. Admission by permission of the instructor. Journalism 151, morning. (Journalism 152 not offered in 1953-54.)

Journalism 151x, same as 151, offered spring term. Evening.

198 Law of the Press (3)

Mathias

Freedom of the press, censorship, legislative controls, publications as contempt of court, copyright, news gathering agencies, labor law and the newspaper business, law of libel, privileged matter, fair comment on public characters, right of privacy. Saturday morning.

LAW

- Charles Sager Collier, A.B., LL.B., S.J.D., *Professor of Law*
 William Thomas Fryer, A.B., LL.B., J.D., *Professor of Law*
 Carville Dickinson Benson, A.B., LL.B., S.J.D., *Professor of Law*
 James Forrester Davison, A.B., LL.B., LL.M., S.J.D., *Professor of Law*
 James Oliver Murdock, Ph.B., LL.B., *Professor of Law*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Professor of Law*
 James Ward Morris, A.B., *Adjunct Professor of Law*
 James Robert Kirkland, A.B., LL.B., LL.M., *Adjunct Professor of Law*
 Bolitha James Laws, LL.B., LL.M., LL.D., *Adjunct Professor of Law*
 Conder Caywood Henry, A.B., LL.B., *Adjunct Professor of Law*
 John Wingfield Jackson, B.S., LL.B., *Adjunct Professor of Law*
 Frank Hammett Myers, LL.B., LL.M., *Adjunct Professor of Law*
 Alvin Leroy Newmyer, LL.B., *Adjunct Professor of Law*
 John Albert McIntire, A.B., LL.B., *Professorial Lecturer in Law*
 Justin Lincoln Edgerton, A.B., LL.B., *Professorial Lecturer in Law*
 Philip Field Herrick, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 George Edward Monk, A.B., LL.B., LL.M., *Professorial Lecturer in Law*
 Charles Sylvanus Rhyne, LL.B., *Professorial Lecturer in Law*
 Jennings Bailey, Jr., A.B., LL.B., *Professorial Lecturer in Law*
 Frederick Bernays Wiener, Ph.B., LL.B., *Professorial Lecturer in Law*
 Robert McKinney Cooper, Ph.M., J.D., *Associate Professor of Law*
 Leroy Sorenson Merrifield, A.B., LL.B., M.P.A., *Associate Professor of Law*
 John Patrick Burke, A.B., LL.B., *Associate Professor of Law*
 Herman Israel Orentlicher, A.B., LL.B., *Associate Professor of Law*
 John Theodore Fey, LL.B., M.B.A., J.S.D., *Associate Professor of Law, Executive Officer*
 David Benson Weaver, A.B., LL.B., *Associate Professor of Law*
 Louis Harkey Mayo, B.S., LL.B., *Associate Professor of Law*
 Glen Earl Weston, B.S., LL.B., *Assistant Professor of Law*
 Roger Allen Cunningham, B.S., LL.B., *Assistant Professor of Law*
 Ernest McClain Jones, B.B.A., LL.B., *Assistant Professor of Law*
 William Thomas Mallison, Jr., A.B., LL.B., *Assistant Professor of Law*
 Joseph Dach, LL.D., LL.B., *Lecturer in Law*
 John Joseph Czyzak, A.M., LL.B., *Lecturer in Law*
 Milton Paul Kroll, A.B., LL.B., *Lecturer in Law*
 Clinch Heyward Belser, A.M., LL.B., *Lecturer in Law*
 Joseph Patrick Driscoll, A.B., LL.B., *Lecturer in Law*

Louis James Harris, A.B., LL.B., S.J.D., LL.M., *Lecturer in Law*
 Charles James Zinn, A.B., LL.B., LL.M., *Lecturer in Law*
 John Alexander Kendrick, A.B., LL.B., *Clerk of the Trial Practice Court*
 Dudley Graham Skinker, LL.B., *Associate Clerk of the Trial Practice Court*

For the requirements for the degrees of *Bachelor of Laws*, *Juris Doctor*, *Master of Laws*, *Master of Comparative Law*, *Master of Comparative Law (American Practice)*, and *Doctor of Juridical Science*, see pages 114-16, 118-19.

FIRST YEAR

101 *Legal Method and Legal System* (4) Fryer, Benson, Weston, Mayo, Cunningham

Introduction to study of substantive and procedural law dealing with basic concepts. Training in method and technique of case law, based upon modern records in state and federal cases, followed by practice in the use of law books and legal writing. Importance of language in law, legal reasoning, statutory interpretation, and use of precedents under the doctrines of *stare decisis*, law of the case, and *res judicata*. Background development of Anglo-American legal system; organization of the judiciary and the bar, stressing enforcement of ethical standards. Fryer and Benson, *Cases on Legal Method*, Cases on Legal System, 2 vol. ed. 1949. Morning and evening sections. (Also offered 1953 summer term.)

Law 101x, same as 101, offered spring term. Morning and evening sections.

111-12 *Contracts* (4-2) Mayo, Jones

Scope of protection accorded contracts; specific performance of contracts other than land transactions; damages, restitution. Mutual assent: offer and acceptance, misunderstanding, mistake, reformation, parol evidence rule. Consideration, third party beneficiaries, assignments, conditions, Statute of Frauds. Morning and evening sections.

123 *Criminal Law and Procedure* (4) Murdock, Cooper

Origin and purposes of criminal law; elements of criminal liability; mental disorders; solicitation, attempt, and conspiracy; crimes against the person, against property, and against both; statutory offenses; criminal procedure, with consideration of Federal Rules of Criminal Procedure. Morning. (Also offered 1953 summer term.)

Law 123x, same as 123, offered spring term. Evening.

133 *Personal Property* (2) Weston, Cunningham, Jones

Concepts of property and ownership; possession; finding; bailment; liens and pledges; acquisition of title by bona fide purchase; adverse possession, accession, confusion, judgment, satisfaction of a judgment, and gift. Morning and evening sections.

Law 133x, same as 133, offered spring term. Evening.

138 *Real Property* (4) Benson, Cunningham

Historical background of estates and conveyances; possessory estates; concurrent estates; natural rights; easements, profits, and licenses;

adverse possession and adverse user. Morning. (Also offered 1953 summer term.)

Law 138x, same as 138, offered fall term. Evening.

- 142 *Torts I* (4) Merrifield
Intended and unintended interference with the person or tangible things, defamation of the person, malicious prosecution. Morning and evening sections.

- 150 *Constitutional Law* (4) Collier, Mallison
Historical introduction, judicial approach and methods, doctrine of the separation of powers, powers of the National Government; the federal system and relation of federal and state courts. Morning and evening sections.

SECOND YEAR

- 205 *Civil Procedure* (4) Fryer
Function and composition of pleadings, including their relation to proof. Emphasis is upon reforms, as exemplified by modern code provisions and the Federal Rules of Civil Procedure. Morning and evening sections. (Also offered 1953 summer term.)

- 208 *Evidence* (4) Fryer, Weston
Functions of court and jury; witnesses; hearsay, opinion, and circumstantial evidence; proof of authenticity and contents of writings. Morning and evening sections. (Also offered 1953 summer term.)

- 210 *Conveyances and Wills* (4) Cunningham
Land contracts, conveyances, mortgages, recording; formation and revocation of wills, testate and intestate succession. Morning and evening sections. (Also offered 1953 summer term.)

- 214 *Legal Accounting* (2) Fey
A study of elementary accounting principles and techniques; application of accounting principles to legal problems. Morning.
Law 214x, same as 214, offered fall term. Evening.

- 218 *Local Government Law* (2) Mallison
Types and objectives of municipal, county, and special purpose local governmental units; intergovernmental relations; original organization and changes; lawmaking by local bodies; community planning and development; legal responsibility of local governmental units. Evening. (Also offered 1953 summer term.)

- 223 *Domestic Relations* (2) Mallison
Marriage, annulment, and divorce; rights of husband and wife; rights of parent and child; infants. Morning and evening sections. (Also offered 1953 summer term.)

- 247 *Commercial Paper* (4) Orentlicher
Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law. Morning and evening sections. (Also offered 1953 summer term.)

- 253 *Torts II—Unfair Trade Practices* (4) Weston
 Unfair trade practices at common law and under state and federal statutes. Trade-marks and trade names, including Trade-Mark Act of 1946. Misappropriation. False advertising at common law. Federal Trade Commission jurisdiction over misrepresentation practices. Lotteries and premiums. Disparagement of competitor's goods and business methods. State Fair Trade Acts (resale price maintenance). Price discrimination (State and Federal Robinson-Patman Act). State statutes prohibiting sales below cost. Inducing breach of contract. Commercial bribery. Miscellaneous business torts constituting unprivileged interferences with advantageous business relations. Oppenheim, *Unfair Trade Practices, Cases, Comments and Materials* (1950). Morning and evening sections.
- 258 *Commercial Transactions* (4) Orentlicher
 The law relating to the sale and distribution of goods, and to the security financing devices utilized in this connection, with particular attention to the effect of uniform laws. Morning and evening sections.
- 261 *Agency-Partnership* (4) Cooper
 Master and servant (status of agent), respondeat superior, nature of agency relation; actual authority, parties (disclosed and undisclosed principal), unauthorized transactions, notice, notification. Formation of partnerships, partnership property, rights and duties of partners inter se, nature and enforcement of the partnership obligation, dissolution of the partnership, actions by and against partners. Morning and evening sections.
- 270 *Corporations* (4) Cooper, Weaver
 Legal requirements as to contributions of capital; powers and rights of corporations, corporate officials, and shareholders. Morning and evening sections.

THIRD YEAR

- 303 *Administrative Law* (4) Davison
 The position of the administrative process in the separation of powers, including the status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, and rule-making—particularly as relating to federal administrative agencies. Davison and Grundstein, *Cases on Administrative Law*. Evening. (Also offered 1953 summer term.)
 Law 303x, same as 303, offered spring term. Morning.
- 309 *Suretyship* (2) Orentlicher
 The law of suretyship, especially in the context of accommodation credit and commercial and financial practices, with attention also to informal and consensual suretyship relations and the place of suretyship principles in the solution of legal problems generally. Morning.
- 312 *Restitution* (2) Orentlicher
 Remedies at law and in equity for restitution of benefits conferred, especially as based on the concept of unjust enrichment. Morning. (Also offered 1953 summer term.)
 Law 312x, same as 312, offered fall term. Evening.

- 315 Conflict of Laws (4)**
Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. Morning. (Also offered 1953 summer term.)
Law 315x, same as 315, offered spring term. Evening.
- 317x Creditors' Rights (4)** Jones
Remedies of unsecured creditors: judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration. Evening.
- 321-22 Current Decisions (2-2)** Davison, Weston
Required of, and limited to, members of the student staff of the *Law Review*. Time to be arranged.
- 324 Federal Jurisdiction (2)** Cooper
Constitutional and statutory origins of federal courts, cases arising under the laws and the Constitution, diversity of citizenship, jurisdictional amount, removal procedure and jurisdiction, limitations on federal jurisdiction, state and federal conflicts, substantive law applied by federal courts. McCormick and Chadbourn, Cases on Federal Courts. Evening.
Law 324x, same as 324, offered fall term. Morning.
- 326 Insurance (2)** Mayo
The insurance device in life, property, and other risks. (Not offered in 1953-54.)
- 327x International Law (4)** Murdock
Origin, nature, sources and authority; the international community, recognition, organization (the United Nations); nationality, territory, jurisdiction; treaties; diplomatic and consular agents; state responsibility and international claims; pacific settlement of disputes. Morning and evening sections.
- 329 Labor Law (4)** Merrifield
Laws applicable to strikes, picketing, boycotts, etc.; organization and representation of employees; negotiation of collective bargaining contracts; inter-union and intra-union relations; settlement of wage disputes (arbitration, mediation, conciliation). Cases, legislative and administrative materials, readings. Morning and evening sections.
- 333 Legislation (4)** Mallison
Justiciable aspects of the legislative process; forms and types of statutes; principles of statutory interpretation, structure and drafting. Evening.
- 335-36 Trial Practice Court (2-2)** Laws, Morris, Kirkland, Edgerton, Myers, Jackson, Herrick, Monk, Newmyer, Kendrick, Skinker
To be taken in the senior year. Prerequisite: Law 205 and 208. Morning and evening sections.

- 337x *Future Interests* (2) Benson
Future interests at common law and under modern statutes, construction of limitations, powers of appointment, rule against perpetuities. Evening. (Also offered 1953 summer term.)
- 340 *Constitutional Interpretations* (4) Collier
Advanced course in constitutional law. The Constitution and constitutional tradition; doctrines of limited government, separation of powers, implied limitations on legislative power, and significance of "due process" in current constitutional developments. Introduction to comparative constitutional law, with studies in the constitutional law of selected states of the Union. Evening.
- 345 *Substantive Patent Law* * (2) Harris
Substantive patent law; patentability; revision, use, and enforcement of patents. Evening.
- 346 *Patent Office Practice* * (2) Henry
Rules of practice; appeal and interference procedure. Evening.
- 349-50 *Patent Trial Practice Court* * (2-2) Henry, Bailey
Practice before the United States Court of Customs and Patent Appeals, the District Court of the United States for the District of Columbia, and the Court of Appeals for the District of Columbia involving suits under Section 4915 of the Revised Statutes; practice before the United States courts in infringement. Evening.
This course may be elected instead of Law 335-36 to satisfy the Trial Practice Court requirement. Both courses may not be counted toward a degree.
- 351x *Public Utilities* (2) Fryer
Regulation by governmental agencies concerned with power fields, dealing principally with services required and determination of rate of return based on "net investment" doctrine. Study of techniques employed in original proceedings and nature of judicial review. Examination of policies underlying national controls over distribution of electricity and natural gas. Evening.
- 365 *Government Contracts I* (2) McIntire
A consideration of the basic power of the Federal Government to enter into contracts; the nature and construction of such contracts; normal and war or defense powers aspects of Government procurement, including administrative and legislative policy and procedures; forms of contracts; standard clauses; advertised bid procedure problems; negotiated contracts; modification of contracts; remedies on contractual claims. Evening.
- 366 *Government Contracts II* (2) McIntire
Special problems in Government contracts, including adjustments and relief; stand-by contracts for mobilization of industrial resources; special relief provisions; efforts toward unified procurement activity; procedure for prosecuting claims under Government contracts; attempts at price, cost, or profit control; termination. Evening.

* Patent law students should take Law 345 and Law 349 concurrently in the fall term and Law 346 and Law 350 concurrently in the spring term. Law 349-50 may be taken only by students who are taking or have taken Law 345.

373 *Taxation (2)*

Collier

Introductory course on basic concepts of federal tax system. Attention given to state inheritance and income taxes. Problems of jurisdiction to tax, construction of tax statutes, methods of judicial review of administrative actions in the tax field, modern excise taxes on business concerns. Magill and Maguire, *Cases on Taxation*, 4th ed. Morning.

Law 373x, same as 373, offered spring term. Evening.

374x *Taxation—Federal Estate and Gift (2)*

Fey

Specific problems in federal estate and gift taxation, with consideration of relevant state inheritance tax problems. Evening.

375-76 *Taxation—Federal Income (2-2)*

Fey, Driscoll

Federal income taxation, including excess profits; imposition and computation problems. Evening. (Also offered 1953 summer term.)

Law 375x (4), same as 375-76 (2-2), offered spring term. Morning.

378 *Federal Anti-Trust Laws (4)*

Restraints of trade at common law. Public policy under Sherman Anti-Trust Act of 1890 and Federal Trade Commission and Clayton Acts, including mergers, consolidations, and monopoly. Loose association activities (price-fixing agreements, trade associations, international cartels). Specific practices such as resale price maintenance, delivered price systems, exclusive arrangements and tying devices, trade boycotts. Patents and copyrights under anti-trust laws. Remedies. Oppenheim, *Cases on Federal Anti-Trust Laws*. Evening.

381 *Trusts (4)*

Weaver

Creation, elements, administration, enforcement, termination. Liabilities to and of third persons. Resulting and constructive trusts. Bogert, *Cases on Trusts*, 2d ed. Morning and evening sections. (Also offered 1953 summer term.)

383 *Military Law and Jurisdiction*

Wiener

Sources of military jurisdiction; military law proper, including court-martial jurisdiction and procedures before, during, and after trial; military government; martial law; laws of war and treatment of offenders. Evening.

386 *Aviation Law (2)*

Rhyne

Procedure before Civil Aeronautics Board; legal problems arising in connection with air transportation and airports, international conventions and organizations. (Not offered in 1953-54.)

388 *Admiralty (2)*

Colclough

Federal and state jurisdiction; jurisdiction over waters, craft, contracts, torts, crimes, in equitable matters, etc.; laws applicable to maritime workers and maritime liens. Sprague and Healy, *Cases on Admiralty*. Evening.

391 *Government Regulation of Communication Media (2)*

Mayo

Examination of the legal doctrine relating to free speech in the channels of mass communication (newspapers, motion pictures, radio, and television); analysis of the control exercised over the content of these

media by government, private owners, and other interests; appraisal of the comparative utility of various regulatory techniques for implementing government policies affecting these media. Evening.

GRADUATE COURSES

- 403 *Administrative Law Seminar* (2) Davison
Group study of specific problems in administrative law. Evening.
Law 403x, same as 403, offered spring term. Evening.
- 405 *Legal Problems in Modern Methods of Warfare* (2) Mallison
The legal aspects of modern methods of exercising coercion (political, psychological, and military); the conduct and regulation of hostilities; the special problems of atomic, bacteriological, and chemical weapons; war crimes. Evening.
- 408 *Regulation of Securities and Securities Markets* (2) Kroll
A study of state and federal laws governing the offering and distribution of securities to the public by corporate issuers and others, the regulation of securities markets, and the rights and liabilities of purchasers under such statutes. Particular emphasis will be given to statutes administered by the Securities and Exchange Commission. (Not offered in 1953-54.)
- 410 *Legal Operation of Modern Social Legislation* (2)
Philosophy, constitutional theory, and legal principles in the operation of the developing socio-economic programs for security of the individual, including Workmen's and Unemployment Compensation, Public Assistance, and related programs. (Not offered in 1953-54.)
- 412 *Recent Legal Developments in International Relations* (2) Czyzak
A study of selected current problems, including the most significant provisions of international trade agreements, particularly the General Agreement on Tariffs and Trade; a review of international commodity problems; and an examination of the legal doctrine relating to the Coal and Steel Community (Schuman Plan). Evening.
- 413 *Labor Law Practice* (2) Merrifield
Practices and procedures in voluntary arbitration cases and before federal agencies, such as National Labor Relations Board, Wage and Hour Division, Federal Mediation and Conciliation Service, and Wage Stabilization Board. Evening.
- 415 *Comparative Law* (4) Murdock
Historical and comparative study of the fundamental principles of the Roman and modern Civil Law (law of South and Central America and most of continental Europe); comparative study of selected legal institutions to exemplify significant differences between the civil and common law systems in source materials and in methods and approaches to the solution of legal problems. Evening.

- 417 *Legislative Drafting* (2) Zinn
Advanced instruction and practice in legislative drafting. Evening.
- 421 *Constitutional Law Seminar* (2) Collier
Group study of contemporary problems in constitutional law. Evening.
- 427 *World Law* (2) Czyzak
The United Nations as a basis of reference for a study of international law. Evening.
- 430x *International Law Seminar* (2) Murdock
Group study of contemporary problems in international law. Evening.
- 432 *Comparative Law Seminar* (2) Murdock
Group study of contemporary problems in comparative law. Evening.
- 435 *Jurisprudence* (4) Collier
History of jurisprudence; schools of jurists, particularly the nineteenth century schools; sociological jurisprudence; theories of justice; the nature of law; law and morals; law and the state; the scope and subject matter of law, sources and forms of law; the traditional element; analysis of general legal concepts. Morning. (Also offered 1953 summer term.)
- 437 *Monetary Law* (2) Dach
Introductory survey of the provisions of public law by which money is administered, relating particularly to the Federal Reserve System; the legal character of money and of monetary obligations; legal tender; the "dollar-for-dollar" rule and its limitations; protective clauses (gold, commodity, and index clauses). Particular emphasis will be given to the law relating to foreign money: money of contract; money of payment; conversion; rate of exchange; conflict of laws problems. (Not offered in 1953-54.)
- 451x *Trade Regulation Seminar* (2) Weston
Group study of current problems relating to unfair trade practices and federal anti-trust laws. Evening.
- 461 *Corporate Taxation Seminar* (2) Fey
Group study of special problems in corporate taxation. Evening.
- 462 *Federal Taxation Seminar* (2) Fey
Group study of special problems in federal taxation. Evening.
- 466 *Estate Planning Seminar* (2) Weaver
Consideration of the problems involved in planning an effective and economical gift distribution of property interests. Typical estates, both large and small, will be considered in the light of the results commonly sought by the donor and the techniques and restrictions suggested by the law of property, wills, future interests, insurance, and federal and state taxation. Evening.
- 468 *Labor Law Seminar* (2) Merrifield
Group study of contemporary problems in labor law. Evening.

MATHEMATICS

James Henry Taylor, Ph.D., *Professor of Mathematics, Executive Officer*
 Francis Edgar Johnston, Ph.D., *Professor of Mathematics*
 Florence Marie Mears, Ph.D., *Professor of Mathematics*
 Nels David Nelson, Ph.D., *Associate Professor of Mathematics*
 Earl Larkin Williams, A.M., *Lecturer in Mathematics*
 Joachim Weyl, Ph.D., *Lecturer in Mathematics*
 Louis William Tordella, Ph.D., *Lecturer in Mathematics*

Bachelor of Arts or Bachelor of Science with a major in Mathematics (Columbian College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60-61. Required: in addition to the general requirements as stated on pages 75-80, fifteen credit hours of Mathematics of approved second- and third-group courses.

Master of Arts or Master of Science in the field of Mathematics (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively, with a major in Mathematics at this University, or the equivalent. Required: the general requirements as stated on pages 81-84.

Bachelor of Science in Engineering with an option in Mathematics (School of Engineering).—For requirements, see pages 124-27, 129-130.

Bachelor of Arts in Education with a teaching field in Mathematics (School of Education).—Prerequisite: the Education curriculum in the Junior College, page 62. Required: the Mathematics option, page 154, and the professional courses listed on pages 155-56.

FIRST GROUP*

3 College Algebra (3)

Exponents and logarithms; linear equations; complex numbers; quadratic equations; introduction to theory of equations; mathematical induction and the binomial theorem; permutations, combinations, and probability; determinants; progressions. Prerequisite: one year each of high school algebra and high school geometry. Morning and evening sections. (Also offered 1953 summer term.)

Mathematics 3x, same as 3, offered spring term. Morning and evening sections.

6 Plane Trigonometry (3)

Prerequisite: two years of high school algebra and one year of high school geometry, or Mathematics 3 (or concurrent registration therefor). Morning and evening sections. (Also offered 1953 summer term.)

Mathematics 6x, same as 6, offered fall term. Morning and evening sections.

12 Analytic Geometry (3)

Prerequisite: Mathematics 3 and 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school

* No first-group course in mathematics is available for college credit if the student's previous training in mathematics meets the prerequisite for a higher numbered course.

trigonometry. Morning and evening sections. (Also offered 1953 summer term.)

Mathematics 12x, same as 12, offered fall term. Morning and evening sections.

19 *Differential Calculus* (3) The Staff

Prerequisite: Mathematics 12. Morning and evening sections. (Also offered 1953 summer term.)

Mathematics 19x, same as 19, offered spring term. Morning and evening sections.

20 *Integral Calculus** (3) The Staff

Prerequisite: Mathematics 19. Morning and evening sections. (Also offered 1953 summer term.)

Mathematics 20x, same as 20, offered fall term. Morning and evening sections.

SECOND GROUP *

102x *Fundamental Concepts of Mathematics* (3) Nelson
Evening.

112 *Mathematics for Engineers and Scientists* (3) The Staff
Topics from advanced calculus, partial differential equations, vector analysis, and complex variables. Prerequisite: Mathematics 132. Evening.

123x *Theory of Equations* (3) Mears
Morning. (Also offered 1953 summer term.)

125x *Advanced Algebra* (3) Tordella
Evening.

126 *Advanced Analytic Geometry* (3) Taylor
Prerequisite: Mathematics 171. Evening.

132 *Differential Equations* (3) The Staff
Morning and evening sections. (Also offered 1953 summer term.)
Mathematics 132x, same as 132, offered fall term. Morning and evening sections.

134 *Introduction to Boundary Value Problems* (3)
Prerequisite: Mathematics 132. (Not offered in 1953-54.)

†135-36 *Projective Geometry* (2-2)
(Not offered in 1953-54.)

139 *Advanced Calculus* (3) Mears
Evening.

140 *Introduction to Analysis* (3) Mears
Prerequisite: Mathematics 139. Evening.

* Mathematics 20 is prerequisite to all second-group courses.

- 141 *Introduction to Infinite Series* (3)
(Not offered in 1953-54.)
- 167 *Fourier Series and Spherical Harmonics* (3)
Prerequisite: Mathematics 132. (Not offered in 1953-54.) Taylor
- 171 *Vector Analysis* (3)
Evening.
- THIRD GROUP
- 202 *Mathematical Logic* (3)
Evening. Nelson
- 220x *Theory of Numbers* (3)
Evening. Nelson
- †237-38 *Theory of Functions* (3-3)
Evening. Johnston
- 242 *Infinite Series* (3)
(Not offered in 1953-54.) Mears
- 249x *Ordinary Differential Equations* (3)
Evening. Taylor
- 250 *Integral Equations* (3)
(Not offered in 1953-54.)
- 255 *Differential Geometry* (3)
(Not offered in 1953-54.)
- 257 *Theory of Groups* (3)
Evening. Johnston
- 265-66 *Modern Algebra* (3-3)
(Not offered in 1953-54.)
- 268 *Calculus of Variations* (3)
(Not offered in 1953-54.)
- 270 *Tensor Analysis* (3)
(Not offered in 1953-54.)
- 271 *Riemannian Geometry* (3)
(Not offered in 1953-54.)
- 277 *Partial Differential Equations* (3)
(Not offered in 1953-54.)
- 278 *Introduction to Topology* (3)
Evening. Weyl
- 295-96 *Reading and Research* (3-3)
Time to be arranged. The Staff
- 299-300 *Thesis* (3-3) The Staff

MECHANICAL ENGINEERING

- Benjamin Carpenter Cruickshanks, B.S. in M.E., *Professor of Mechanical Engineering, Executive Officer*
 Clarence Edward Bardsley, C.E., Sc.D., *Professorial Lecturer in Mechanical Engineering*
 Roy Colbert, B.S. in M.E., *Professorial Lecturer on Engineering Administration*
 Rudolph Michel, M.S. in M.E., *Professorial Lecturer in Mechanical Engineering*
 Robert Gay Trumbull, B.S. in C.E., *Associate Professor of Mechanical Engineering*
 Charles Edward Greeley, B.S. in M.E., *Associate Professor of Mechanical Engineering*
 John Kaye, M.S. in M.E., *Associate Professor of Mechanical Engineering*
 Bernard Bernstein, B.S., B.M.E., *Lecturer in Mechanical Engineering*
 Richard Lee Fenton, B.M.E., *Lecturer in Mechanical Engineering*
 David William Baker, M.S., *Lecturer in Mechanical Engineering*
 Eli Baer Roth, B.S., M.S. in M.E., *Lecturer in Mechanical Engineering*
 John Clifford Goff, B.M.E., *Associate in Mechanical Engineering*
 Edward French Davis, M.S., *Associate in Mechanical Engineering*
 Arnold Mayo Kronstadt, B.M.E., *Associate in Mechanical Engineering*
Bachelor of Mechanical Engineering (School of Engineering).—See pages 124-26 and 128-29 for statement of requirements.
Master of Science in Engineering (School of Engineering).—See pages 131-32 for statement of requirements.
Mechanical Engineer (School of Engineering).—see pages 132-33 for statement of requirements.

FIRST GROUP

- 1 *Engineering Survey and Orientation (1)* Cruickshanks and Staff
Open to freshmen only. Morning and evening sections.
- 3 *Mechanical Drawing (2)* Trumbull
Drafting-room fee, \$5. Drafting (6 hours)—afternoon and evening sections.
- 4 *Descriptive Geometry (2)* Trumbull, Davis
Drafting-room fee, \$5. Drafting (6 hours)—afternoon and evening sections.
- 7 *Machine Drawing (2)* Greeley
Prerequisite: Mechanical Engineering 3 and 4. Drafting-room fee, \$5.

Drafting (6 hours). 1953-54 and alternate years, afternoon; 1954-55 and alternate years, evening.

8 Mechanism Drawing (2)

The Staff

Prerequisite: Mechanical Engineering 3, 4, and 13. Prerequisite or concurrent registration: Mechanical Engineering 14. Drafting-room fee, \$5. Drafting (6 hours). 1953-54 and alternate years, afternoon; 1954-55 and alternate years, evening.

13-14 Mechanism (2-2)

Trumbull

Prerequisite: Mathematics 19. Prerequisite or concurrent registration: Mathematics 20. Morning and evening sections.

SECOND GROUP

111-12 Thermodynamics (3-3)

Cruickshanks

With introductory study of laws of heat transmission. Prerequisite: junior status. Morning and evening sections.

115-16 Mechanical Laboratory (2-2)

Greeley

Calibration of instruments; calorimetry; testing of prime movers, auxiliaries, combustion engines, and refrigerating machines. Eight-hour power-plant test required. Prerequisite: senior status. Laboratory fee, \$9 a term. Laboratory (6 hours). 1953-54 and alternate years, afternoon; 1954-55 and alternate years, evening.

126 Methods of Manufacture (2)

Greeley

Foundry practices, forging, welding, machine tools, inspection, factory processes. Inspection trips required. Prerequisite: Mechanical Engineering 8 and 14; Civil Engineering 26. 1953-54 and alternate years, morning; 1954-55 and alternate years, evening.

127-28 Machine Design (2-2)

Kaye

With stress-analysis computation and design periods (6 hours). Prerequisite: Mechanical Engineering 7, 8, and 112; Civil Engineering 20, 136, and 140. Drafting-room fee, \$3 a term. 1953-54 and alternate years, evening; 1954-55 and alternate years, afternoon.

129-30 Power Plants (3-3)

Cruickshanks

Study of design, layout, installation, and operation of power plants and equipment, with emphasis on heat transmission and instrumentation. Prerequisite: Mechanical Engineering 112. 1953-54 and alternate years, evening; 1954-55 and alternate years, morning.

131-32 Heating, Ventilating, Air Conditioning, and Refrigeration (2-2)

Kaye

Principles and applications. Prerequisite: Mechanical Engineering 112; Civil Engineering 26 and 136. 1953-54 and alternate years, afternoon; 1954-55 and alternate years, evening.

133 Combustion Engines (2)

Greeley

Study of spark-ignition and compression-ignition engines, combustion, performance, fuels, knock, supercharging and combustion charts. Inspection trips required. Prerequisite: Mechanical Engineering 112; senior status. 1953-54 and alternate years, morning; 1954-55 and alternate years, evening.

- 139 *Fluid Dynamics* (3) Kaye
Theory and application of fluid mechanics. Prerequisite: Mechanical Engineering 112; Civil Engineering 140. 1953-54 and alternate years, evening; 1954-55 and alternate years, morning.
- 140 *Dynamics of Machinery* (3) Michel
Inertia effects, balancing, vibration phenomena. Prerequisite: Mechanical Engineering 7, 8, and 14; Civil Engineering 140. 1953-54 and alternate years, evening; 1954-55 and alternate years, morning.
- 141-42 *Management Problems* (2-2) Kaye
Organization of an industrial enterprise; the handling and training of men. Prerequisite: Economics 1-2. 1953-54 and alternate years, evening; 1954-55 and alternate years, morning.
- 145 *Production Control and Planning* (2) Colbert
Scope of production controls, product analysis, planning and routing systems and methods. Prerequisite: Mechanical Engineering 141-42. Evening.
- 146 *Engineering Patent Procedure* (2)
Nature and purpose of patents, procedures for preparing and filing patent applications, trade marks and design patents, employer-employee relations. Prerequisite: Mechanical Engineering 141-42. Evening.
- 147 *Industrial Labor Relations* (2) Colbert
Prerequisite: Mechanical Engineering 141-42. (Not offered in 1953-54.)
- 189-90 *Proseminar in Mechanical Engineering* (1-1) Kaye
Prerequisite: Speech 1; senior status. Late afternoon.

THIRD GROUP

- 201 *Instrumentation* (3)
Theory of measurement and instrumentation systems. Physical principles involved in research and commercial instrumentation. Design problems. 1954-55, evening.
- 202 *Advanced Dynamics of Machinery* (3) Kaye
Free, damped, and forced vibrations of mechanical systems; the dynamic response of elastic systems. Selected topics in vibration isolation and control. 1953-54, evening.
- 203 *Advanced Fluid Dynamics* (3) Mason
Advanced mechanics of real and ideal fluids, potential theory, turbulence, boundary layer mechanics, hydrodynamic lubrication. 1953-54, evening.
- 204 *Heat Transfer Thermodynamics*
Advanced problems in compression of gases and liquids; combustion. Heat transfer problems involving radiation, convection, conduction, evaporation, and condensation. 1954-55, evening.
- †217-18 *Seminar in Engineering* (1-1) The Staff
Time to be arranged.
- 299-300 *Thesis* (3-3) The Staff

MEDICINE

- Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*
 Thomas McPherson Brown, A.B., M.D., *Professor of Medicine, Executive Officer*
 Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*
 Clayton Bernard Ethridge, M.D., *Clinical Professor of Medicine*
 Sol Katz, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Louis Katz Alpert, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Joseph Francis Fazekas, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Harry Eagle, A.B., M.D., *Professorial Lecturer in Medicine*
 Robert William Berliner, B.S., M.D., *Professorial Lecturer in Medicine*
 Henry Field, Jr., M.D., *Professorial Lecturer in Medicine*
 Monroe James Romansky, A.B., M.D., *Associate Professor of Medicine*
 Peter Diacoumis Comanduras, B.S., M.D., M.S. in Med., *Associate Clinical Professor of Medicine*
 John McCallum Evans, A.B., M.D., *Associate Clinical Professor of Medicine*
 Walter Kendall Myers, B.S., M.D., *Assistant Clinical Professor of Medicine*
 John Alton Reed, A.B., M.D., *Assistant Clinical Professor of Medicine*
 Theodore Judson Abernethy, B.S., M.D., *Assistant Clinical Professor of Medicine*
 William Travis Gibb, Jr., A.B., M.D., *Assistant Clinical Professor of Medicine*
 Roy Hertz, Ph.D., M.D., *Assistant Clinical Professor of Medicine*
 Alfred Henry Lawton, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
 Samuel Ross Taggart, M.D., *Assistant Clinical Professor of Medicine*
 Benjamin Manchester, M.D., *Assistant Clinical Professor of Medicine*
 Clarence Richard Hartman, A.B., M.D., *Assistant Clinical Professor of Medicine*
 Pearl Holly, M.S., M.D., *Assistant Clinical Professor of Medicine*
 James Joseph Feffer, A.B., M.D., *Assistant Clinical Professor of Medicine*
 John Coleman Nunamaker, M.S., M.D., *Assistant Clinical Professor of Medicine*
 Maurice Protas, A.B., M.D., *Associate in Medicine*
 John Minor, A.B., M.D., *Associate in Medicine*
 Lawrence Jay Thomas, B.S., M.D., *Associate in Medicine*
 Lawrence Elias Putnam, A.B., M.D., *Associate in Medicine*

- John Watkins Trenis, A.B., M.D., *Associate in Medicine*
 Bernard Lauriston Hardin, Jr., A.B., M.D., *Associate in Medicine*
 Albert David Kistin, A.M., M.D., *Associate in Medicine*
 Charles William Ordman, A.B., M.D., *Associate in Medicine*
 Andrew Gabriel Prandoni, B.S., M.D., *Associate in Medicine*
 Ruth Hechler Wichelhausen, M.D., *Associate in Medicine*
 Benjamin Calloway Jones, Jr., A.B., M.D., *Associate in Medicine*
 Richard Bernard Castell, A.B., M.D., *Associate in Medicine*
 Myer Harold Stolar, B.S., M.D., *Associate in Medicine*
 Sam Thompson Gibson, B.S., M.D., *Associate in Medicine*
 Walter Lewis Nalls, B.S., M.D., *Associate in Medicine*
 Alfred Brigulio, M.D., *Associate in Medicine*
 Halla Brown, M.D., *Associate in Medicine*
 Ralph Bretney Miller, A.B., M.D., *Associate in Medicine*
 Thomas Stone Sappington, A.B., M.D., *Associate in Medicine*
 John Christian Ransmeier, A.B., M.D., *Associate in Medicine*
 Monte Arnold Greer, A.B., M.D., *Associate in Medicine*
 Thomas James Kennedy, Jr., B.S., M.D., *Associate (Research) in Medicine*
 Jack Orloff, M.D., *Associate (Research) in Medicine*
 Ernest Cotlove, B.S., M.D., *Associate (Research) in Medicine*
 Samuel Jacob Nathan Sugar, Phar.G., M.D., *Associate in Medicine*
 Joseph Ney, B.S., M.D., *Associate in Medicine*
 Joseph Beinstein, A.B., M.D., *Associate in Medicine*
 Frank Solomon Bacon, B.S., M.D., *Associate in Medicine*
 Arno Motulsky, B.S., M.D., *Associate (Research) in Medicine*
 Henry Dunlop Ecker, B.S., M.D., *Associate in Medicine*
 Jack Jacob Rheingold, A.B., M.D., *Associate in Medicine*
 Irene Gorski Tamagna, M.D., *Associate in Medicine*
 James Irving Boyd, M.D., M.S., *Lecturer in Medicine*
 Elizabeth Harman Hill, M.D., *Instructor in Medicine*
 John Bayne Marbury, M.D., *Clinical Instructor in Medicine*
 Louis Ross, M.D., *Clinical Instructor in Medicine*
 James Theodore Burns, M.D., *Clinical Instructor in Medicine*
 Frederic Dunbar Chapman, A.B., M.D., C.M., *Clinical Instructor in Medicine*
 Irvin Kerlan, B.S., M.D., C.P.H., *Clinical Instructor in Medicine*
 Virginia Patterson Beelar, A.B., M.D., *Clinical Instructor in Medicine*
 Lester Sylvan Blumenthal, A.B., M.D., M.S. in Med., *Clinical Instructor in Medicine*
 Charles Edward Law, M.D., *Clinical Instructor in Medicine*
 Emil Herbert Bauersfeld, A.B., M.D., *Clinical Instructor in Medicine*
 John Wilmer Latimer, Jr., M.D., *Clinical Instructor in Medicine*
 Luther Henry Snyder, A.B., M.D., *Clinical Instructor in Medicine*

- Charles Wilson Jones, A.B., M.D., *Clinical Instructor in Medicine*
 Stanley William Kirstein, B.S., M.D., *Clinical Instructor in Medicine*
 Thomas Joseph Pekin, B.S., M.D., *Clinical Instructor in Medicine*
 Robert George Taylor, M.D., *Clinical Instructor in Medicine*
 Charles Waters Thompson, M.D., *Clinical Instructor in Medicine*
 Maurice Franks, A.B., M.D., *Clinical Instructor in Medicine*
 James Walling Long, M.D., *Clinical Instructor in Medicine*
 James Francis Ambury, B.S., M.D., *Clinical Instructor in Medicine*
 William Otis Bailey, Jr., M.D., *Clinical Instructor in Medicine*
 Harry Clark Bates, B.S., M.D., *Clinical Instructor in Medicine*
 Robert Norwood Coale, B.S., M.D., *Clinical Instructor in Medicine*
 Eugene Solomen Gladsden, B.S., M.D., *Clinical Instructor in Medicine*
 Israel Kessler, M.S., M.D., *Clinical Instructor in Medicine*
 Maurice Mensh, M.D., *Clinical Instructor in Medicine*
 Francis James Murray, B.S., M.D., *Clinical Instructor in Medicine*
 Edwin Pearson Parker III, B.S., M.D., *Clinical Instructor in Medicine*
 Morris Hirsh Rosenberg, A.B., M.D., *Clinical Instructor in Medicine*
 Jeanne Cecile Bateman, A.B., M.D., *Clinical Instructor in Medicine*
 John William Du Chez, M.D., *Clinical Instructor in Medicine*
 Thomas Lees Hartman, A.M., M.D., *Clinical Instructor in Medicine*
 William Raymond Merchant, A.B., M.D., *Clinical Instructor in Medicine*
 Boris Rabkin, A.B., M.D., *Clinical Instructor in Medicine*
 Morton Harold Rose, M.D., *Clinical Instructor in Medicine*
 George Sharpe, A.B., M.D., *Clinical Instructor in Medicine*
 Marvin Fuchs, B.S., M.D., *Clinical Instructor in Medicine*
 Frank Goodnow MacMurray, A.B., M.D., *Clinical Instructor in Medicine*
 William Jack Weaver, Jr., A.B., M.D., *Clinical Instructor in Medicine*
 Ruth Boschwitz Benedict, A.B., M.D., *Clinical Instructor in Medicine*
 Cyril Augustus Schulman, B.S., M.D., *Clinical Instructor in Medicine*
 Louis Aleck Craig, Jr., A.B., M.D., *Clinical Instructor in Medicine*
 Abraham Wolffe Danish, A.B., M.D., *Clinical Instructor in Medicine*
 Milton Gusack, A.B., M.D., *Clinical Instructor in Medicine*
 William Lewis, M.D., *Clinical Instructor in Medicine*
 Arthur Rosenbaum, B.S., M.D., *Clinical Instructor in Medicine*
 Alvin Seltzer, B.S., M.D., *Clinical Instructor in Medicine*
 Adolph Friedman, A.B., M.D., *Clinical Instructor in Medicine*
 Samuel Dennis Loube, A.B., M.D., *Clinical Instructor in Medicine*
 Alvin Edward Parrish, M.D., *Clinical Instructor in Medicine*
 Nahum Raphael Shulman, M.D., *Clinical Instructor in Medicine*
 Stewart William Bush, B.S., M.D., *Clinical Instructor in Medicine*
 Jack Kleh, A.B., M.D., *Clinical Instructor in Medicine*
 Alfred John Baer, A.B., M.D., *Clinical Instructor in Medicine*

- 132 *History of Medicine* The Staff
One hour a week.
- 236 *Clinical Microscopy* The Staff
Conferences and studies in the clinical application of laboratory examinations of blood, body fluids, exudates, and excreta. Three hours a week.
- 241 *Physical Diagnosis I* The Staff
Theoretical considerations of the principles of physical diagnosis. One hour a week.
- 242 *Physical Diagnosis II* The Staff
Covers not only theoretical but practical application of principles of physical diagnosis as related to examination of patients. Six hours a week.
- 244 *Introduction to Medicine* The Staff
Lectures covering the principles of internal medicine preparatory to clinical studies and training in the inpatient and outpatient services. Four hours a week.
- 320 *Medical Jurisprudence* The Staff
Lectures on the legal and ethical rights of physicians, and on the legal problems with which the physician comes in contact. One hour a week for sixteen weeks.
- 325-26 *Clinical Clerkships* The Staff
Training with bed patients under individual instruction designed to develop ability in examination of patients and case taking as well as practice in clinical microscopy. Eight weeks.
- 327-28 *Clinical Pathological Conferences I* Brown, Choisser
Required in the third year. Correlation of clinical and post-mortem findings: detailed case description from the clinical point of view followed by demonstrations of post-mortem findings. One hour a week.
- 339-40 *Therapeutic Conferences I* Staff of Medicine and Pharmacology
Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine. One hour a week.
- 349-50 *Medical Conferences* The Staff
Two hours a week.
- 421-22 *Outpatient Clinics* The Staff
Individual case studies under personal supervision of the Staff. Daily clinics on current medical problems and seminars stressing physiological aspects of diseases. Individual examinations and instruction in medical specialties. University and Emergency hospitals. Eight weeks.
- 423-24 *Clinical Clerkship* The Staff
Available at the University, Emergency, Mt. Alto, and Walter Reed hospitals. Eight weeks.

427-28 *Clinical Pathological Conferences II* Brown, Choiser
Required in the fourth year. Continuation of 327-28. One hour a week, in rotation.

431 *Forensic Medicine* The Staff
Organized in conjunction with the University Law School for the purpose of acquainting medical students with their legal responsibilities. Three hours a week for four weeks.

NEUROLOGY AND NEUROLOGICAL SURGERY

Walter Freeman, Ph.D., M.D., *Professor of Neurology, Executive Officer*

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*

Hyman David Shapiro, M.D., *Associate Clinical Professor of Neurology*

Robert Henry Groh, B.S., M.D., *Assistant Clinical Professor of Neurology*

Jonathan Marshall Williams, M.D., *Assistant Clinical Professor of Neurological Surgery*

Paul Chodoff, A.B., M.D., *Associate in Neurology*

James Peter Murphy, B.S., M.D., *Associate in Neurological Surgery*

Hugo Victor Rizzoli, A.B., M.D., *Associate in Neurological Surgery*

*George Davis Weickhardt, M.D., *Associate in Neurology*

Oscar Legault, A.B., M.D., *Clinical Instructor in Neurology*

John William Kemble, A.B., M.D., *Clinical Instructor in Neurology*

Harvey Ammerman, B.S., M.D., *Clinical Instructor in Neurological Surgery*

249 *Neurology (elective)* **Freeman**
Methods used to study the form and function of the nervous system. Lectures and laboratory demonstrations. One hour a week.

250 *Neurology* **Shapiro**
Introductory lectures on clinical neurology with specimens, lantern slides, and motion pictures. One hour a week.

331 *Neurology and Neurological Surgery* **Watts, Shapiro**
Clinical lectures and demonstrations. One hour a week.

333-34 *Neurology and Neurological Surgery, Clinical Clerkship* **Freeman and Staff**

Instruction in history, physical examination, ordinary clinical procedures. Attendance at neurosurgical operations. Gallinger Hospital. Six students in rotation, two weeks.

335-36 *Neurological Conference* **Freeman and Staff**
Clinical conference one afternoon a week followed by clinicopathologic study of specimens from current necropsies. Gallinger Hospital. Two and one-half hours a week. Six students in rotation, two weeks.

431-32 *Neurology and Neurological Surgery Clinic* **Shapiro, Watts**

Neurological outpatient clinic. Consultation of staff on ambulatory cases, demonstration of diagnostic procedures, disposition of neuro-psychiatric cases, ward rounds. University Hospital. Six students in rotation. Two hours a week.

* On national service leave.

433-34 *Clinical Neurology*

Groh, Weickhardt

Neurological inpatient examinations and demonstrations at St. Elizabeths Hospital. Six students in rotation. Two hours a week.

436 *Neurological Surgery (elective)*

Watts and Staff

Lectures and motion picture demonstration of neurosurgical problems. One hour a week.

OBSTETRICS AND GYNECOLOGY

- John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology, Executive Officer*
- Radford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*
- Jacob Kotz, M.D., *Clinical Professor of Obstetrics and Gynecology*
- Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
- Herbert Percy Ramsey, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
- Robert Henry Barter, B.S., M.D., *Associate Professor of Obstetrics and Gynecology*
- George Nordlinger, A.B., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- Laurence Lee Cockerille, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- Samuel Mayer Dodek, A.M., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- Roger O'Donnell, Jr., A.B., M.D., *Associate in Obstetrics and Gynecology*
- Clayton Howard Hixson, M.D., *Associate in Obstetrics and Gynecology*
- Henry John Russell McNitt, B.S. in Med., M.D., *Associate in Obstetrics and Gynecology*
- James Albert Dusbabek, M.D., *Associate in Obstetrics and Gynecology*
- Clarence Kendall Fraser, Ph.B., M.D., *Associate in Obstetrics and Gynecology*
- Barton Winters Richwine, M.D., *Associate in Obstetrics and Gynecology*
- Jeremiah Keith Cromer, M.D., *Associate in Obstetrics and Gynecology*
- Floyd Sterling Rogers, M.D., *Associate in Obstetrics and Gynecology*
- Rufus Martin Roll, A.B., M.D., *Associate in Obstetrics and Gynecology*
- Katherine Elizabeth Parker, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- William Dandridge Terrell, Jr., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Julius Robert Epstein, M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Morton Selwyn Kaufman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Caroline Jackson, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*

- William Thurston Lady, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Jed Williams Pearson, Jr., A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Samuel Hazen Shea, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Miles Leonard, Ph.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Albert Seymour Bright, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Shirley Sue Martin, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Neel Jack Price, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Roland Essig Bieren, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Alexander LeSueur Russell, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Marvin Peace Footer, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Donald Walters, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Leon McNeely Liverett, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Joseph Marshall Friedman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*

254 *Normal Obstetrics*

Lectures and demonstrations on the physiology and management of normal pregnancy. One hour a week. Fraser, Dodek

301-2 *Manikin Demonstrations*

The mechanism of labor and various types of operative delivery demonstrated to sections of the junior class in weekly sessions. Footer

337-38 *Abnormal Obstetrics*

Lectures and demonstrations on the complications of pregnancy. One hour a week. Parks, Nordlinger

343-44 *Gynecology*

Lectures and demonstrations on the principles of gynecology. One hour a week. Brown, Darner, Barter

441-42 *Clinical Obstetrics*

Senior students participate in prenatal and postnatal clinic care; observe the course of labor and deliver patients under supervision. Parks, Barter

attend biweekly departmental conferences and daily ward rounds in the University and Gallinger hospitals.

443-44 *Clinical Gynecology*

Parks, Barter

Senior students observe and participate in the gynecological clinics and operating rooms of the University and Gallinger hospitals.

OPHTHALMOLOGY

- Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology, Executive Officer*
 Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*
 Richard Wallace Wilkinson, M.S., M.D., *Assistant Clinical Professor of Ophthalmology*
 Carmon Robert Naples, B.S., M.D., *Associate in Ophthalmology*
 Walter Joseph Romejko, M.D., *Associate in Ophthalmology*
 William Paxson Chalfant, Jr., M.D., *Associate in Ophthalmology*
 William Joseph Graham Davis, A.B., M.D., *Associate in Ophthalmology*
 Robert Edward duPrey, B.S., M.D., *Clinical Instructor in Ophthalmology*
 Robert Day, A.B., M.D., *Clinical Instructor in Ophthalmology*
 Jorge Guillermo Ramirez, B.S.M., M.D., *Clinical Instructor in Ophthalmology*
 Ralph John Carbo, Jr., A.B., M.D., *Clinical Instructor in Ophthalmology*

351-52 *Ophthalmology*

A lecture course presenting the principles of ophthalmology, with special reference to topics of importance to the general practitioner. One hour a week for sixteen weeks.

The Staff

447 *Clinic*

During medical outpatient service, each student is given individual instruction in the ophthalmological aspects of systemic disease.

The Staff

OTOLARYNGOLOGY

Daniel Bruce Moffett, A.B., M.D., *Professor of Otolaryngology, Executive Officer*

William Herndon Jenkins, M.D., *Clinical Professor Otolaryngology*

Aubrey David Fischer, M.D., *Assistant Clinical Professor of Otolaryngology*

James Jerry McFarland, Jr., B.S., M.D., *Associate in Otolaryngology*

Catharine Birch, A.B., M.D., *Clinical Instructor in Otolaryngology*

Aram Glorig, Jr., M.D., *Clinical Instructor in Otolaryngology*

Jack Louis Levine, M.D., *Clinical Instructor in Otolaryngology*

Morris Edward Krucoff, B.S., M.D., *Clinical Instructor in Otolaryngology*

Russell Smith Page, Jr., M.D., *Clinical Instructor in Otolaryngology*

Willard Beecher Walters, B.S., M.D., *Clinical Instructor in Otolaryngology*

Albert Sidney Winer, A.B., M.D., *Clinical Instructor in Otolaryngology*

351 *Otolaryngology*

Moffett, Jenkins

Lectures and demonstrations on anatomy, physiology, and diseases of the ear, nose, and throat. One hour a week.

354 *Bronchoscopy*

McFarland

A series of lectures on the fundamental principles and the use of instruments, including both the bronchoscope and esophagoscope. One hour a week for two weeks.

356 *Clinic*

The Staff

Practical clinical instruction in the diagnosis and treatment of diseases of the ear, nose, and throat. Gallinger Hospital. One and one-half hours once a week.

PATHOLOGY

Roger Morrison Choisser, B.S., M.D., *Professor of Pathology, Executive Officer*

Thomas Martin Peery, A.B., M.D., *Professor of Pathology*
 Virgil Heath Cornell, M.D., Dr.P.H., *Professor of Pathology*
 Daniel Leigh Weiss, A.B., M.D., *Adjunct Clinical Professor of Pathology*
 Frank Nelson Miller, B.S., M.D., *Associate Professor of Pathology*
 William Newman, A.B., M.D., *Assistant Professor of Pathology*
 Edward Clifford McGarry, A.B., M.D., *Clinical Instructor in Pathology*
 William John Schewe, B.S., M.D., *Clinical Instructor in Pathology*

SEMINAR LECTURERS

Elson Bowman Helwig, B.S., M.D., *Professorial Lecturer in Pathology*
 Hans Frank Smetana, M.D., *Professorial Lecturer in Pathology*
 Henry Rappaport, M.D., *Professorial Lecturer in Pathology*
 Elizabeth Mapelsden Ramsey, A.B., M.D., *Professorial Lecturer in Pathology*

259-60 *Pathology*

Malformations, inflammations, degenerations, and neoplasms; special pathology of the organs and specific diseases. The laboratory work consists of the gross and microscopic study of diseased tissues. Necropsies are held regularly at the University and Gallinger hospitals. Choisser and Staff

307 *Necropsy (elective)*

Students assist in the performance of necropsies. Fresh gross specimens and microscopic sections from each case are presented at weekly conferences. Current literature relating to cases is reviewed and presented by the students. The Staff

327-28 *Clinical Pathological Conference*

Required in the third and fourth years. Case histories are presented and discussed by members of the staff and student body; necropsy and clinical findings are compared, and gross and microscopic specimens examined. One hour a week. Choisser, Brown, Newman

491-92 *Surgical Pathology*

One hour conference each week. Choisser

496 *Research (arr.)*

Open to qualified nonmedical students. Time and credits to be arranged.

PEDIATRICS

- Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics, Executive Officer*
- Margaret Mary Nicholson, A.B., M.D., *Clinical Professor of Pediatrics*
- Edward Lewis, M.D., *Clinical Professor of Pediatrics*
- William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*
- Leroy Edward Hoeck, M.D., *Adjunct Clinical Professor of Pediatrics*
- John Augustine Washington, B.S., M.D., *Associate Clinical Professor of Pediatrics*
- Reginald Spencer Lourie, M.D., *Associate Clinical Professor of Pediatric Psychiatry*
- John Phillip McGovern, B.S., M.D., *Assistant Professor of Pediatrics*
- Joseph Michael LoPresti, B.S., M.D., *Assistant Professor of Pediatrics*
- Mabel Harlakenden Grosvenor, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- Aaron Nimetz, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- Dorothy Steinle Jaeger-Lee, M.D., *Assistant Clinical Professor of Pediatrics*
- George Maksim, M.D., M.S. in Ped., *Assistant Clinical Professor of Pediatrics*
- Samuel Paul Bessman, M.D., *Assistant Clinical Professor of Pediatrics*
- William Allen Howard, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- John Howell Peacock, B.S., M.D., *Associate in Pediatrics*
- Maynard Irving Cohen, A.B., M.D., *Associate in Pediatrics*
- Mary Katherine Laurence Sartwell, A.B., M.D., *Associate in Pediatrics*
- Allan Bertram Coleman, M.D., *Associate in Pediatrics*
- Lambert Gozef Herman Ramaekers, M.D., *Associate (Research) in Pediatrics*
- Herbert Harold Diamond, M.D., *Clinical Instructor in Pediatrics*
- Reginald Henry Mitchell, M.D., *Clinical Instructor in Pediatrics*
- Charles Frederick Stiegler, A.B., M.D., *Clinical Instructor in Pediatrics*
- Hugh Gambel Clark, A.B., M.D., *Clinical Instructor in Pediatrics*
- *Adrian Recinos, Jr., B.S., M.D., *Clinical Instructor in Pediatrics*
- Robert Orr Warthen, M.D., *Clinical Instructor in Pediatrics*
- Emilie Annabelle Black, B.S., M.D., *Clinical Instructor in Pediatrics*
- Robert Harper Anderson, M.D., *Clinical Instructor in Pediatrics*
- Warren Godfrey Preisser, A.B., M.D., *Clinical Instructor in Pediatrics*
- Robert Edward Martin, M.D., *Clinical Instructor in Pediatrics*
- Muriel Schatz Sowers, A.B., M.D., *Clinical Instructor in Pediatrics*
- Charles Richard Webb, B.S., M.D., *Clinical Instructor in Pediatrics*
- William Stark, A.B., M.D., *Clinical Instructor in Pediatric Psychiatry*

* On national service leave.

- 256 *Pediatrics* McLendon and Staff
Lectures on physiology of the newborn, development, infant nutrition, diseases of the newborn, common anomalies and system illnesses of infancy and childhood. Medical School. Two hours a week.
- 357-58 *Clinical Clerkship—General Pediatrics* McGovern, LoPresti, and Staff
Introduction to clinical pediatrics. Emphasis on bedside discussion and group seminars including the newborn. Ward rounds. Gallinger Hospital. Five students in rotation, two weeks.
- 359-60 *Clinical Clerkship—Contagious Diseases* McGovern, LoPresti, and Staff
Conferences and bedside discussion in contagious and infectious diseases. Prevention and quarantine measures. Gallinger Hospital. Five students in rotation, two weeks.
- 361-62 *Clinical Conference* McLendon and Staff
Required in third year. Presentation and discussion by students of current patient problems. Gallinger Hospital. One hour a week.
- 363-64 *Ward Rounds* Nicholson, McGovern, LoPresti, and Staff
Bi-weekly ward rounds, with students and Resident Staff. Gallinger Hospital.
- 365-66 *Psychiatry* Lourie and Staff
Lectures on normal behavior and emotional development. Clinical case analysis. Second, third, and fourth years.
- 457-58 *Clinical Clerkship* Anderson, McGovern, LoPresti, and Staff
Full time, including assignment to night and holiday admissions. Case studies on wards under direct Resident supervision. Ward rounds with Staff and Residents. Childrens Hospital. Twelve students, six weeks.
- 459-60 *Outpatient Clinics* McLendon and Staff
Work in Medical and Specialty clinics including surgery, allergy, X-ray, child welfare, cardiology, dermatology, neurology, and child guidance. Childrens Hospital.
- 461-62 *Clinico-pathological Conference* The Staff
Clinical and pathological discussion of recent patient history and laboratory data. Childrens Hospital. Once a week.
- 463-64 *Section Conferences* The Staff
Discussion of clinical problems of diagnosis and treatment of current patients. Childrens Hospital. Twice a week.
- 465-66 *Section Conference* The Staff
Surgical diagnosis, pre- and post-operative management. One hour a week. Fourth year. Childrens Hospital.

- 467-68 *Clinical Conference II* McLendon and Staff
Required in the fourth year. Case presentation by fourth-year students. Staff and student discussion of diagnosis and management. Medical School. One hour a week.
- 469-70 *Child Guidance and Development* Jeager-Lee, Lourie
Lectures to second year class. Clerkship in fourth year including Well Baby Clinic. Group and class conferences.

PHARMACOLOGY

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology, Executive Officer*

Bernard Beryl Brodie, Ph.D., *Professorial Lecturer in Pharmacology*

Harold George Mandel, Ph.D., *Associate Professor of Pharmacology*

Pierre Emmanuel Carlo, Ph.D., *Assistant Professor of Pharmacology*

Harriet Mylander Maling, Ph.D., *Assistant Research Professor of Pharmacology*

Elizabeth Potts Anderson, Ph.D., *Assistant Research Professor of Pharmacology*

Sheldon Edward Reaume, Ph.D., *Assistant Research Professor of Pharmacology*

261 *Pharmacology (5)*

Lectures and conferences concerning the interaction of drugs and biological systems as a basis for the rational therapy of disease. Open to qualified nonmedical students. Five hours a week. The Staff complement

263 *Pharmacology Laboratory (2)*

Laboratory instruction and demonstrations designed to complement the above course. Open to qualified nonmedical students. Five hours a week. The Staff complement

265 *Chemotherapy (1)*

Five lectures a week for three weeks. For graduate students. Time to be arranged. The Staff complement

267-68 *Pharmacological Research (arr.)*

Primarily for those properly qualified graduate and medical students seeking careers in pharmacology. Hours and credits to be arranged. The Staff complement

269-70 *Pharmacology Seminar (1-1)*

Recent advances in pharmacology. For those interested in pharmacological research. Open to qualified nonmedical students. Two hours a week. The Staff complement

280 *Special Methods in Research (arr.)*

A course to familiarize the student with advanced physiological methods employed in pharmacological research. Open to qualified nonmedical students. Hours and credits to be arranged. The Staff complement

299-300 *Thesis (3-3)*

Required of Master of Arts and Master of Science candidates. The Staff complement

339-40 *Therapeutic Conferences I*

Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine. One hour a week. The Staff complement

PHARMACY

Charles Watson Bliven, M.S., *Professor of Pharmacy, Executive Officer*
 Salvatore Joseph Greco, Ph.D., *Associate Professor of Pharmacy*
 Robert Meyer Leonard, B.S. in Phar., *Assistant Professor of Pharmacology and Pharmacognosy*
 Willis Eugene Moore, B.S. in Phar., *Assistant Professor of Pharmaceutical Chemistry*
 Carson Gray Frailey, A.B., LL.B., *Lecturer on Pharmaceutical Law*
 Harold Jerome Bobys, A.B., C.P.A., *Lecturer on Pharmacy Accounting*
 Charles Byrd Hawthorne, B.S. in Phar., M.B.A., *Lecturer on Pharmacy Management*
 Franklin Dero Cooper, M.S., *Instructor in Hospital Pharmacy*

SEMINAR LECTURERS

William Paul Briggs, M.S., Sc.D., LL.D., *Professorial Lecturer on Pharmacy Training*
 Frederick John Cullen, Phar.G., M.D., *Professorial Lecturer on Drug Manufacture*
 John Christian Krantz, Jr., Ph.D., *Professorial Lecturer on Pharmaceutical Research*
 Justin Lawrence Powers, Ph.D., *Professorial Lecturer on Official Drug Standards*
 George Potter Larrick, *Professorial Lecturer on Drug Control*
 Robert Philip Fischelis, B.S., Phar.D., Sc.D., *Professorial Lecturer on Pharmaceutical Organizations*
 Daniel Lamont Seckinger, M.D., Dr.P.H., *Professorial Lecturer on Hygiene and Sanitation*

Bachelor of Science in Pharmacy (School of Pharmacy).—Prerequisite: the Pharmacy curriculum in the Junior College, see page 61. The requirements for the degree are stated on pages 137-39.

Master of Science in Pharmacy (School of Pharmacy).—Prerequisite: the degree of Bachelor of Science from an accredited institution. The requirements for the degree are stated on pages 139-41.

FIRST GROUP

- 1-2 *History and Literature of Pharmacy (2-1)* Bliven
 Orientation in pharmacy; a survey of the development of the profession of pharmacy and the literature of pharmacy. Morning.
- 21-22 *General Pharmacy (4-4)* Greco, Cooper, Moore
 Essential pharmaceutical processes; the theory and manufacture of pharmacopoeial and formulary galenical preparations; the pharma-

ceutical usage of certain classes of substances and preparations. *Pharmacy 21*.—Laboratory fee, \$9. Lecture (3 hours); laboratory (3 hours)—morning. *Pharmacy 22*.—Laboratory fee, \$15. Lecture (3 hours); laboratory (6 hours)—afternoon.

- 23 *Pharmacognosy* (3) Leonard
Macroscopic and microscopic. Prerequisite: Botany 1. Laboratory fee, \$9. Lecture (2 hours)—morning; laboratory (3 hours)—morning and afternoon.

- 25 *Pharmaceutical Calculations* (3) Bliven
The system of weights and measures and their application in the practice of pharmacy. Morning.

SECOND GROUP

- 101 *Inorganic Pharmaceutical Chemistry* (3) Moore
Inorganic chemistry as it applies to pharmacy. Study of reactions, preparations, and incompatibilities of inorganic pharmaceuticals. Prerequisite: Chemistry 21. Laboratory fee, \$9. Lecture (2 hours)—morning; laboratory (3 hours)—afternoon.

- 102 *Dispensing Pharmacy* (4) Greco
Compounding of typical prescriptions and a study of incompatibilities. Prerequisite: Pharmacy 22; concurrent registration: Pharmacy 110. Laboratory fee, \$15. Lecture (2 hours); laboratory (6 hours)—afternoon.

- 103 *Dispensing Pharmacy* (4) Greco
Continuation of Pharmacy 102. Laboratory fee, \$15. Lecture (2 hours)—morning; laboratory (6 hours)—afternoon.

- 105-6 *Pharmacology I* (2-2) Leonard
The general principles of pharmacology; locally acting drugs; chemotherapeutic agents; antibiotics; antianemia drugs; endocrine drugs; vitamins. Prerequisite or concurrent registration: Physiology 115. Afternoon.

- 107 *Pharmacy Accounting* (3) Bobys
The financial records required in the operation of a pharmacy. Morning.

- 110 *Chemistry and Pharmacy of Medicinal Products* (3) Moore
A study of the chemistry, structural relationship to action, and uses of the official and important non-official synthetic and natural organic medicinal compounds. Prerequisite or concurrent registration: Chemistry 152. Morning.

- 111 *Chemistry and Pharmacy of Medicinal Products* (3) Moore
A continuation of Pharmacy 110, including laboratory work on the syntheses, chemical and physical properties, and incompatibilities of important organic medicinal products. Prerequisite: Pharmacy 110. Laboratory fee, \$12. Lecture (2 hours)—morning; laboratory (4 hours)—afternoon.

- 165-66 *Pharmacology II* (3-3) Leonard
Drugs acting on the central nervous system, the autonomic nervous system, and on specific tissues; toxicology; diagnostic drugs; biological assays. Prerequisite: Physiology 115 and 117; Pharmacy 106. *Pharmacy 165*—morning. *Pharmacy 166*.—Laboratory fee, \$15. Lecture (2 hours)—morning; laboratory (4 hours)—afternoon.
- 167-68 *Pharmacology III* (3-3) Leonard
Laboratory work in pharmacological technique. Prerequisite: Pharmacy 106. Prerequisite or concurrent registration: Pharmacy 165. Laboratory fee, \$15 a term. Time to be arranged.
- 172 *Advanced Dispensing Pharmacy* (3) Greco
The study of special problems in dispensing pharmacy. Prerequisite: Pharmacy 103. Laboratory fee, \$15. Time to be arranged.
- 173 *Quantitative Pharmaceutical Analysis* (3) Bliven, Moore
Drug analysis. Prerequisite: Chemistry 22. Laboratory fee, \$15. Lecture (1 hour); laboratory (6 hours). Time to be arranged.
- 176 *Pharmaceutical Law* (2) C. G. Frailey
Morning.
- 178 *Pharmacy Management* (4) Hawthorne
Policies and operations relating to the management of a pharmacy. Morning.
- 182 *Advanced Pharmacology I* (2) Leonard
Special problems in the field of pharmacology. Prerequisite or concurrent registration: Pharmacy 166. Time to be arranged.
- 184 *Special Problems in Pharmacy* (arr.) Greco, Moore
Directed laboratory and library research on special problems in pharmacy and pharmaceutical chemistry. For selected undergraduate students. Prerequisite or concurrent registration: Pharmacy 102 and 110. Credits and fees to be arranged.
- 188 *Survey* The Staff
A symposium covering the various phases of pharmacy. Required of all majors in Pharmacy. No academic credit. Tuition fee, \$15. Morning.
- 190 *Hospital Pharmacy* (1) Cooper
Organization and functions of hospitals; organization and operation of a hospital pharmacy; professional and sickroom supplies. Prerequisite: Pharmacy 102. Lecture (1 hour)—morning.
- 192 *Hospital Pharmacy: Prescription Practice* (1) Cooper
Prescription practice in the University Hospital Pharmacy. Prerequisite: Pharmacy 102. Laboratory (3 hours)—time to be arranged. (Also offered 1953 summer term.)

194 Manufacturing Pharmacy (3)

Cooper

The manufacture of bulk pharmaceuticals in the University Hospital pharmacy. Elective for seniors. Lecture (1 hour)—afternoon; laboratory (6 hours)—time to be arranged.

THIRD GROUP**201-2 Survey of Pharmaceutical Literature (1-1)**

The Staff

Assigned library research on the development of pharmaceutical literature. Time to be arranged.

203-4 Special Problems in General Pharmacy (2-2)

Greco

Investigations of problems involved in the manufacture of pharmaceutical preparations on a laboratory scale. Laboratory fee, \$15 a term. Time to be arranged.

206 Pharmaceutical Technology (4)

Greco, Cooper

A study of advanced manufacturing pharmacy, including formula development for the different types of preparations. Laboratory fee, \$15. Lecture (2 hours); laboratory (6 hours). (Not offered in 1953-54.)

215-16 Advanced Pharmacology II (3-3)

Leonard

Special studies on biological assay methods. Laboratory fee, \$15 a term. Lecture (1 hour); laboratory (6 hours). (Not offered in 1953-54.)

221-22 Chemistry of Naturally Occurring**Organic Medicinal Products (5-5)**

A study of the isolation, chemistry, and relationship between the constitution and physiologic action of alkaloids, fats and sterols, terpenes, carbohydrates, glycosides, and the various biological products. Laboratory fee, \$15 a term. Lecture (3 hours); laboratory (6 hours). (Not offered in 1953-54.)

223-24 Chemistry of Synthetic Organic**Medicinal Products (5-5)**

A study of the chemistry and relationship between the structure and physiologic action of hydrocarbons and their derivatives, nitrogen compounds, oxygen compounds, sulfur compounds, and organo-metallic compounds. Laboratory fee, \$15 a term. Lecture (3 hours); laboratory (6 hours). (Not offered in 1953-54.)

226 Determination of Physical Constants (2)

A laboratory and lecture study of the determination of physical constants of medicinal products. Laboratory fee, \$15. Lecture (1 hour); laboratory (3 hours). (Not offered in 1953-54.)

228 Food and Drug Analysis (4)

Bliven, Moore

A study of the composition of some common foods and food products. Laboratory fee, \$15. Lecture (2 hours); laboratory (6 hours). Time to be arranged.

231 Pharmacology of Anesthetic Drugs (4)

Leonard

Theoretical consideration of the principles of anesthesiology and lab-

oratory study of the action of anesthetic drugs. Laboratory fee, \$15.
(Not offered in 1953-54.)

- 234 *Pharmacology of Autonomic Drugs* (4) Leonard
A study of action and interaction of drugs principally influencing the autonomic nervous system. Laboratory fee, \$15. (Not offered in 1953-54.)

- 236 *Experimental Toxicology* (4) Leonard
Pharmacological action of toxic drugs correlated with chemical and pathological studies. Laboratory fee, \$15. (Not offered in 1953-54.)

- 251-52 *Graduate Seminar* (1-1) The Staff
Current problems and trends in pharmacy. Required of all students registered for the Master's degree. (Not offered in 1953-54.)

- 295-96 *Research and Thesis* (arr.) The Staff
Investigations of special problems in the major field of interest and thesis preparation. Credit hours (not to exceed 6 credit hours) and fees to be arranged. (Not offered in 1953-54.)

PHILOSOPHY

Charles Edward Gauss, Mus.B., Ph.D., *Elton Professor of Philosophy*,
Executive Officer

Associate in Philosophy

Bachelor of Arts with a major in Philosophy (Columbia College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College, including Philosophy 51-52, see page 60. Required: in addition to the general requirements stated on pages 75-80, the grade of "pass" for the Philosophy major examination at the end of the senior year. The coordinated knowledge upon which the student will be examined is summarized under the following general headings: (1) history of philosophy, (2) logic and theory of knowledge, (3) social philosophy. The Department of Philosophy provides a proseminar (Philosophy 199-200) intended to assist the student in preparing himself for his major examination.

Master of Arts in the field of Philosophy (Columbia College).—Prerequisite: an undergraduate major in Philosophy at this University or the equivalent, as attested by the passing of this University's major examination in Philosophy; the following specific courses or the equivalent: Philosophy 111-12, 121-22, and 131. Required: the general requirements as stated on pages 81-84. As much as possible of the required twenty-four credit hours should be in third-group courses. Students electing second-group courses are expected to do more intensive work than is demanded of undergraduates. A general written examination on the problems of the field of Philosophy and a departmental oral examination are required.

FIRST GROUP

51-52 *Introduction to Philosophy (3-3)*

A critical introduction to the problems of modern philosophy in relation to scientific and social developments since the Renaissance. Morning and evening sections. (Also offered 1953 summer term.)

The Staff

SECOND GROUP

111-12 *History of Philosophy (3-3)*

History of western philosophy from Thales to Kant. Evening.

Gauss

113 *History of Nineteenth and Twentieth Century Philosophy (3)*

Continuation of Philosophy 111-12. Prerequisite: Philosophy 111-12. (Not offered in 1953-54.)

Gauss

121-22 *Logic and Scientific Method (3-3)*

The study of formal logic and the means of investigation and description employed in the sciences; theory of scientific inference and prediction. Evening. (Also offered 1953 summer term—Philosophy 121 (3).)

Gauss

131 *Ethics (3)*

An examination of ethical theories, the relation of ethics to social science and psychology. Evening.

- 142 *Metaphysics* (3)
Problems related to the formation of a world view. Emphasis on the data of modern science and the problems posed by contemporary philosophy. (Not offered in 1953-54.)
- 162 *Aesthetics* (3) Gauss
The problems of appreciation and judgment in the arts, and of theories of the process of artistic creation. Emphasis on contemporary arts and criticism. (Not offered in 1953-54.)
- 171-72 *American Philosophy* (3-3)
A general history of philosophy in the United States, correlated with the development of European thought. (Not offered in 1953-54.)
- 180 *Philosophy of History* (3) Gauss
Problems of historical knowledge and explanation. Critique of philosophies of history. Evening.
- 193 *Topics in Contemporary Philosophy* (3) Gauss
(Not offered in 1953-54.)
- 199-200 *Proseminar: Readings for the Major* (3-3) Gauss
Conferences and group discussions. Evening.

THIRD GROUP

- 201-2 *Readings and Research* (3-3) The Staff
Advanced readings and reports. Investigation of special problems. Time to be arranged.
- 211-12 *Seminar in Plato and Aristotle* (3-3) The Staff
(Not offered in 1953-54.)
- 213-14 *Seminar in Seventeenth and Eighteenth Century Philosophy* (3-3) Gauss
Topic for 1953-54, Leibnitz and Hume. Evening.
- 216 *Seminar in Kant* (3) Gauss
(Not offered in 1953-54.)
- 299-300 *Thesis* (3-3) The Staff

PHYSICAL EDUCATION FOR MEN *

William Henry Myers, A.M., *Professor of Physical Education for Men*
 Milo Frederick Christiansen, B.S., M.R., *Professorial Lecturer in Physical Education*

‡Cecil Wentworth Morgan, Ph.D., *Professorial Lecturer in Physical Education*

Joseph Henry Krupa, M.S., Ed.D., *Associate Professor of Physical Education for Men, Executive Officer*

Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*

Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Men*

William Jennings Reinhart, B.B.A., *Associate in Physical Education for Men*

Eugene Hugh Sherman, Sr., B.S., *Associate in Physical Education for Men*

This Department includes all the recognized athletic activities of the men students of the University.

Two years of Physical Education (Physical Education 1-2 and 11-12) are required of all men for graduation, except those students exempt under the regulations stated on page 44.

Upon entering the University, all freshmen or other undergraduate students who have not fulfilled the Physical Education requirement are given a medical examination. Assignments for medical examinations will be given at the time of registration. The students who satisfy the requirements of the medical examination are then given a physical efficiency test in the general bodily skills of agility, endurance, and strength; and in swimming. If the physical efficiency test is passed, the student may elect from the following list of activities:

Setting-up Exercises (stretching exercises)

Body Building Exercises (gymnastic apparatus and weight lifting skills)

Competitive Exercises (modified games and sports)

Swimming Exercises (distance, speed, and life saving)

If the physical efficiency test is not passed, the student will be assigned to a class for training in the above activities in the order listed.

The Department furnishes gymnasium uniforms and personal equipment upon a small payment.

Bachelor of Science in Physical Education (School of Education).—Prerequisite: the Physical Education for Men curriculum in the Junior College, see page 63. The requirements for the degree are stated on pages 147-48.

Master of Arts in Education in the field of Physical Education (School of Education).—Prerequisite: a Bachelor's degree from an accredited institution. The requirements for the degree are stated on pages 157-59.

* The University is not responsible for injuries received in intercollegiate or intramural games or in any of the activities of the departments of Physical Education.
 ‡ On national service leave.

FIRST GROUP

- 1-2 *Freshman Physical Education** (2-2) The Staff
Four periods of supervised activity a week. Locker and towel fee, ‡ \$3 a term. Assignment for activities and time to be arranged.
- 11-12 *Sophomore Physical Education** (2-2) The Staff
Four periods of supervised activity a week. Locker and towel fee, ‡ \$3 a term. Assignment for activities and time to be arranged.
- 43-44 *Techniques of Physical Education Motor Activities* (2-2) DeAngelis
Fundamental skills, rules, and organization. Locker and towel fee, ‡ \$3 a term. Morning and afternoon sections.
- 45-46 *Methods and Materials for Teaching Individual and Dual Sports in Secondary Schools* (2-2) The Staff
Tennis, golf, archery, swimming, wrestling, badminton, bowling. Locker and towel fee, ‡ \$3 a term. Afternoon.
- 47 *Introduction to Physical Education* (2) Krupa
An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field. Morning.
- 48 *Introduction to Recreation* (2) Hanken
The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership needed. Time to be arranged.
- 49 *Human Anatomy* (3) Lawrence
The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in Physical Education. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 50 *Kinesiology* (3) Lawrence
A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy. Morning.
- 58 *First Aid and Care of Athletic Injuries* (2) De Angelis, Lawrence
Prevention and emergency care of injuries of all types, with special reference to first aid, bandaging, and massage. A practical course. Prerequisite: Biology 1-2 or Zoology 1-2. Afternoon.

SECOND GROUP

- 101 *Physical Education in the Elementary School* (3) Atwell, Burtner
Physical growth and development of the child and adolescent. Survey

* Freshmen and sophomores in the School of Engineering and the School of Pharmacy are required to take two, instead of four, periods of Physical Education a week for which they receive one, instead of two, credits a term.

‡ The locker and towel fee is required for registration in one or more of the activity courses.

- of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials in tumbling, games, rhythms, and self-testing activities. Morning and evening sections.
- 103 *History and Principles of Physical Education* (3) Atwell, Krupa
Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education. Morning.
- 105-6 *Corrective Physical Education and Physical Examinations* (3-3) Lawrence
Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises, and program adaptation. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 107 *Techniques for Teaching Recreational Dance* (1) Burtner
Methods and materials for teaching the country and social dances of America and the folk dances of other countries to secondary-school age and adult groups. Square-dance calling is included. Afternoon.
- 109-10 *Leadership Organization in the Intramural Program* (2-2) DeAngelis
Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college. Afternoon.
- 113-14 *Methods and Practice in Teaching Physical Education Activities* (2 to 4-2 to 4) The Staff
Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Morning and afternoon sections.
- 115-16 *Methods and Materials for Teaching Team Sports in Secondary Schools* (2 to 4-2 to 4) The Staff
Section A (women): field hockey, basketball, softball, soccer, speedball, volleyball. Afternoon. Section B (men): football, basketball, baseball, track and field. Afternoon. Locker and towel fee,* \$3 a term.
- 118 *Methods of Teaching Modern Dance* (2 to 4) Burtner
Techniques for the teaching of movement as a medium of expression. Practical work in body technique, composition, and the analysis of accompaniment for dance including instrumental, voice, and percussion. Application is made to both secondary-school and adult age levels. Afternoon.
- 121 *School and Community Health Programs* (3) Krupa
Health services, healthful environment, health instruction, sources of

* The locker and towel fee is required for registration in one or more of the activity courses.

material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.

- 122 *Methods and Materials of Health Education* (3) Atwell
Organization and presentation of health materials for each age level.
Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 131 *Tests and Measurements in Physical Education* (3) Krupa
Critical survey tests in physical activities, methods of test construction, elementary statistics. Morning.
- 132 *Camp Leadership* (1) Atwell
Survey course in camp counseling. Afternoon.
- 133-34 *Observation and Practice Teaching* (3-3) Atwell, Myers
Assignments are made to schools in Washington and the vicinity.
Practice teaching fee, \$9 a credit hour. Time to be arranged.
- 136 *Survey of Dance History and Dance Forms* (3) Burtner
The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques and composition. Evening.
- 138 *Organization and Administration of Physical Education* (3) Atwell, Myers
Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and programs. Morning.
- 151-52 *Recreational Leadership Activities* (1 to 3-1 to 3) Christiansen
Fall term: basic skills for the pre-school and school-age child. Laboratory practice in crafts, music, dramatics, physical and social activities. Spring term: basic skills for the teen-age and adult. Arts and crafts, dramatics, physical and social activities. 1954-55 and alternate years, evening.
- 161 *Community Organization for Recreation* (3) Christiansen
Resources, principles, and methods in organizing community recreation services. 1953-54 and alternate years, evening.
- 162 *Administration of Community Recreation Programs* (3) Christiansen
Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations. 1953-54 and alternate years, evening.

THIRD GROUP

- 211 *Problems in Physical Education* (3) Anderson
For experienced teachers. Organization, supervision, and curriculum

- problems growing out of current issues; program planning policies; competition. 1954-55 and alternate years, evening.
- 220 *Problems in Health Education* (3)
Health needs; policies and program planning; use of community resources; promising practices in the field. 1954-55 and alternate years, evening.
- 231 *Evaluation in Physical Education* (3) Anderson
Planning the evaluation program; review of outcomes; analysis of tests and standards; administration and interpretation of tests; guidance. 1953-54 and alternate years, evening.
- 240 *Physical Education for the Atypical* (3)
Adaptations of activities to meet the special needs of students with physical disabilities resulting from such conditions as postural deviations, cardiac irregularities, operations, and poliomyelitis. 1953-54 and alternate years, evening.

PHYSICAL EDUCATION FOR WOMEN *

Ruth Harriet Atwell, A.M., *Professor of Physical Education for Women, Executive Officer*

Helen Bennett Lawrence, A.M., *Professor of Physical Education for Women*

George Frederick Anderson, M.S., Ed.D., *Professorial Lecturer in Physical Education*

Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*

Nancy Elizabeth Nickel, B.S. in Ed., *Instructor in Physical Education for Women*

Helen Taylor Harris, A.M., *Associate in Physical Education for Women*

Camille Jacob Craig, A.M., *Associate in Physical Education for Women*

Two years of Physical Education (Physical Education 1-2 and 11-12) are required of all women for graduation, except of students exempt under the regulations stated on page 44. In the fall a complete medical and physical examination is given each student for the purpose of discovering individual needs. Those students whose examinations indicate the desirability of remedial or restricted activity are assigned to a program especially adapted to their needs. This limited program includes moderate sports and individual exercises in small groups under careful supervision.

The required costume for Physical Education classes may be purchased at the University Book Store.

Bachelor of Science in Physical Education (School of Education).—Prerequisite: the Physical Education for Women curriculum in the Junior College, see page 63. The requirements for the degree are stated on pages 148-49.

Master of Arts in Education in the field of Physical Education (School of Education).—Prerequisite: a Bachelor's degree from an accredited institution. The requirements for the degree are stated on pages 157-59.

FIRST GROUP

1-2 *Freshman Physical Education (1-1)*

The Staff

One period of fundamentals of health and physical education and two periods a week chosen from the activities offered each season.

Fundamentals of health and physical education; study of the factors involved in the maintenance of health and in the efficient use of the body. Morning and afternoon sections.

Activities: riding, field hockey, folk and square dance, modern dance, bowling, basketball, badminton, body mechanics, swimming, tennis, softball, archery, golf, canoeing. Locker and towel fee, ‡ \$3 a term. Morning and afternoon sections.

* The University is not responsible for injuries received in intercollegiate or intramural games, or in any of the activities of the departments of Physical Education.
‡ The locker and towel fee is required for registration in one or more of the activity courses

- 11-12 *Sophomore Physical Education (1-1)* The Staff
Two periods a week chosen from the activities offered each season as listed under Physical Education 1-2. Locker and towel fee,* \$3 a term. Two periods a week; morning and afternoon sections.
- 43-44 *Techniques of Physical Education Motor Activities (2-2)* The Staff
Fundamental skills, rules, and organization. Locker and towel fee,* \$3 a term. Morning and afternoon sections.
- 45-46 *Methods and Materials for Teaching Individual and Dual Sports in Secondary Schools (2-2)* The Staff
Tennis, golf, archery, swimming, badminton, bowling. Locker and towel fee,* \$3 a term. Afternoon.
- 47 *Introduction to Physical Education (2)* Krupa
An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field. Morning.
- 48 *Introduction to Recreation (2)* Hanken
The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary. Types of leadership. Time to be arranged.
- 49 *Human Anatomy (3)* Lawrence
The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in Physical Education. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 50 *Kinesiology (3)* Lawrence
A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy. Morning.
- 58 *First Aid and Care of Athletic Injuries (2)* DeAngelis, Lawrence
Prevention and emergency care of injuries of all types, with special reference to first aid, bandaging, and massage. A practical course. Prerequisite: Biology 1-2 or Zoology 1-2. Afternoon.

SECOND GROUP

- 101 *Physical Education in the Elementary School (3)* Atwell, Burtner
Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, rhythms, and self-testing activities. Morning and evening sections.

* The locker and towel fee is required for registration in one or more of the activity courses

- 103 *History and Principles of Physical Education* (3) Atwell, Krupa
Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education. Morning.
- 105-6 *Corrective Physical Education and Physical Examinations* (3-3) Lawrence
Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises, and program adaptation. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 107 *Techniques for Teaching Recreational Dance* (1) Burtner
Methods and materials for teaching the country and social dances of America and the folk dances of other countries to secondary-school age and adult groups. Square-dance calling is included. Afternoon.
- 109-10 *Leadership Organization in the Intramural Program* (2-2) DeAngelis
Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college. Afternoon.
- 113-14 *Methods and Practice in Teaching Physical Education Activities* (2 to 4-2 to 4) The Staff
Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Morning and afternoon sections.
- 115-16 *Methods and Materials for Teaching Team Sports in Secondary Schools* (2 to 4-2 to 4) The Staff
Section A (women): field hockey, basketball, softball, soccer, speedball, volleyball. Afternoon. Section B (men): football, basketball, baseball, track and field. Afternoon. Locker and towel fee,* \$3 a term.
- 118 *Methods of Teaching Modern Dance* (2 to 4) Burtner
Techniques for the teaching of movement as a medium of expression. Practical work in body technique, composition, and the analysis of accompaniment for dance including instrumental, voice, and percussion. Application is made to both secondary-school and adult age levels. Afternoon.
- 121 *School and Community Health Programs* (3) Krupa
Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 122 *Methods and Materials of Health Education* (3) Atwell
Organization and presentation of health materials for each age level. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.

* The locker and towel fee is required for registration in one or more of the activity courses.

- 131 *Tests and Measurements in Physical Education* Krupa
(3)
Critical survey of tests in physical activities, methods of test construction, elementary statistics. Morning.
- 132 *Camp Leadership* (1) Atwell
Survey course in camp counseling. Afternoon.
- 133-34 *Observation and Practice Teaching* (3-3) Atwell, Myers
Assignments are made to schools in Washington and the vicinity. Practice teaching fee, \$9 a credit hour. Time to be arranged.
- 136 *Survey of Dance History and Dance Forms* (3) Burtner
The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques and composition. Evening.
- 138 *Organization and Administration of Physical Education* (3) Atwell, Myers
Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and programs. Morning.
- 151-52 *Recreational Leadership Activities* Christiansen
(1 to 3-1 to 3)
Fall term: basic skills for the pre-school and school-age child. Laboratory practice in crafts, music, dramatics, physical and social activities. Spring term: basic skills for the teen-age and adult. Arts and crafts, dramatics, physical and social activities. 1954-55 and alternate years, evening.
- 161 *Community Organization for Recreation* Christiansen
(3)
Resources, principles, and methods in organizing community recreation services. 1953-54 and alternate years, evening.
- 162 *Administration of Community Recreation Programs* (3) Christiansen
Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations. 1953-54 and alternate years, evening.
- THIRD GROUP**
- 211 *Problems in Physical Education* (3) Anderson
For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. 1954-55 and alternate years, evening.
- 220 *Problems in Health Education* (3)
Health needs; policies and program planning; use of community resources; promising practices in the field. 1954-55 and alternate years, evening.

- 231 *Evaluation in Physical Education (3)* Anderson
Planning the evaluation program; review of outcomes; analysis of tests and standards; administration and interpretation of tests; guidance. 1953-54 and alternate years, evening.
- 240 *Physical Education for the Atypical (3)*
Adaptations of activities to meet the special needs of students with physical disabilities resulting from such conditions as postural deviations, cardiac irregularities, operations, and poliomyelitis. 1953-54 and alternate years, evening.

PHYSICAL MEDICINE AND REHABILITATION

Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation, Executive Officer*

Josephine Jordan Buchanan, A.M., M.D., *Assistant Clinical Professor of Physical Medicine and Rehabilitation*

Alvin Knudson, B.S., M.D., *Associate in Physical Medicine and Rehabilitation*

John Herman Kuitert, A.B., M.D., *Associate in Physical Medicine and Rehabilitation*

Jasper Wayne McFarland, B.S., M.D., *Clinical Instructor in Physical Medicine and Rehabilitation*

150 *Elements of Physical Medicine*

In arrangement with the Anatomy Department, lectures and demonstrations of the various tests and measurements are employed in the evaluation of physical disability. Emphasis is placed on normal and abnormal peripheral nerve testing (electrodiagnosis), muscle testing, joint range, and other physical disability measurements. The Staff

351-52 *Advanced Physical Medicine*

Lectures and demonstrations concerning the various techniques, clinical applications of physical medicine and rehabilitation to be integrated with the teaching of the associated medical and surgical specialties. The Staff

467-68 *Clinical Studies*

Clinical teaching and demonstration at the University Hospital. The Staff

485 *Research (arr.)*

Open to medical students and qualified nonmedical students. and credits to be arranged. The Staff
Time

PHYSICS

Thomas Benjamin Brown, Ph.D., *Professor of Physics, Executive Officer*
 Walter Lynn Cheney, Ph.D., *Professor of Physics*
 George Gamow, Physics D., *Professor of Theoretical Physics*
 George Martin Koehl, A.M., *Professor of Physics*
 Zoltan Bay, Ph.D., *Research Professor of Physics*
 *Robert Randal Meijer, Ph.D., *Associate Professor of Physics*
 James Gwavas Beckerley, Ph.D., *Professorial Lecturer in Physics*
 Charles Ravitsky, M.S. in Ed., *Lecturer in Physics*
 William Franklin Heckert, M.S., *Instructor in Physics*
 Albert Prentice Kenyon, A.M., *Associate in Physics*
 John Newell Tevis, A.M., *Associate in Physics*
 DeWitt Fisher, A.M., *Associate in Physics*
 Walter Louis Asling, A.M., *Associate in Physics*
 Robert Franklin Custard, B.S. in Eng., LL.B., *Associate in Physics*
 Franklin Dean McLernon, B.S., *Associate in Physics*

Bachelor of Arts or Bachelor of Science with a major in Physics (Columbia College—Departmental).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60-61. The following courses must be included: Physics 6, 7, 8, and 55; Chemistry 21; Mathematics 19 and 20.

Required, for both the Bachelor of Arts degree and the Bachelor of Science degree: the general requirements as stated on pages 75-80, including Mathematics 132 and Physics 101, 105, 106, 113, 132, and 155 or 156, plus one of the following: Physics 102, 114, 123, and 128.

Master of Science in the field of Physics (Columbia College).—Prerequisite: a Bachelor's degree with a major in Physics at this University, or the equivalent. Required: the general requirements as stated on pages 81-84. The thirty hours of required work must include Mathematics 171 (if not taken earlier) and Physics 211-12, 255 or 256, and 291-92.

Bachelor of Science in Engineering with an option in Physics (School of Engineering).—For requirements, see pages 129-30 and 131.

Bachelor of Arts in Education with a teaching field in Physics (School of Education).—Prerequisite: the Education curriculum, page 62. Required, the Physics option, page 154, and the professional courses listed on pages 155-56.

FIRST GROUP

5 General Physics (3)

Koehl and Staff

An introduction to the phenomena of light, heat, force, energy, and the properties of matter. This course may be taken as a terminal course by non-science students who wish an introduction to the physical sciences. Prerequisite: high school algebra and plane geom-

* On leave of absence 1953-54.

etry. Material fee, \$9. Lecture (1 hour); recitation (1 hour); laboratory (2½ hours). Morning, afternoon, and evening sections. (Also offered 1953 summer term.)

Physics 5x, same as 5, offered spring term. Lecture (1 hour)—morning and evening sections; recitation (1 hour)—morning, afternoon, and evening sections; laboratory (2½ hours)—morning, afternoon, and evening sections.

6 General Physics (3)

Cheney and Staff

Mechanics, wave-motion, sound, and optical instruments. Offered spring term. Prerequisite: Physics 5*; high school algebra and plane geometry. Material fee, \$9. Lecture (1 hour); recitation (1 hour); laboratory (2½ hours). Morning, afternoon, and evening sections. (Also offered 1953 summer term.)

7 General Physics (3)

The Staff

Elementary electricity and magnetism. Offered fall term. Prerequisite: Physics 5*; high school algebra and plane geometry. Material fee, \$9. Lecture (1 hour); recitation (1 hour); laboratory (2½ hours). Morning, afternoon, and evening sections.

8 General Physics (3)

Brown and Staff

This course is the fourth in the sequence of courses 5, 6, 7, and 8, and emphasizes the connection between the fundamental principles studied in courses 5, 6, and 7, and the phenomena and theories of modern physics. Topics considered include electromagnetic waves (light, radio, and X-rays), atomic and molecular structure, radioactivity, nuclear physics, the quantum theory of matter and radiation, and the elementary particles such as electrons, protons, neutrons, and mesons. Prerequisite: Physics 6 and 7. Morning and evening sections. (Also offered 1953 summer term.)

55 Physical Measurements (3)

Cheney and Staff

Theory and methods of precise measurement in the several fields of physics. Prerequisite: Physics 6 and 7, and Mathematics 19. Material fee, \$9. Lecture (2 hours); laboratory (2½ hours)—afternoon and evening sections.

SECOND GROUP

101 Mechanics (3)

Koehl

Statics, elasticity, dynamics of solids and fluids, and gravitation. Prerequisite: Physics 6; Mathematics 20. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.

102 Heat and Thermodynamics (3)

Cheney

Thermometry, calorimetry, heat conduction, the laws of thermodynamics with application to physical systems. Prerequisite: Physics 8; Mathematics 20. 1953-54 and alternate years, evening. 1954-55 and alternate years, morning.

* This prerequisite may be waived for students who have credit for a high school Physics course which included individual laboratory work, providing they pass the qualifying examination given at the dates specified in the University calendar.

- 105 *Principles of Electricity* (3)
Fundamental phenomena of electricity and magnetism; circuit theory, including elementary alternating-current circuits; terrestrial magnetism; atmospheric electricity. Prerequisite: Physics 8; Mathematics 20. 1953-54 and alternate years, morning. 1954-55 and alternate years, evening.
- 106 *Optics* (3) Koehl
Geometrical optics; elementary theory of wave motions; interference, diffraction, polarization, and dispersion of light; laws of black-body radiation. Prerequisite: Physics 8; Mathematics 20. 1953-54 and alternate years, morning. 1954-55 and alternate years, evening.
- 110 *Philosophical Foundations of Modern Physics* (3) Gamow
A non-mathematical treatment. Einstein's ideas of space, time, and motion; the expanding universe; quantum theories concerning the structure of matter; protons, neutrons, mesons, and other elementary particles; the principle of uncertainty; statistical methods of physics; application of physics to the problems of living matter. Prerequisite: high school algebra and one year of college science. Not open to majors in physics or chemistry. 1953-54 and alternate years. Evening.
- 113 *Atomic Physics* (3)
Properties of the electron and the other fundamental particles of physics; the photoelectric effect; X-rays and crystal structure; wave aspects of particles; elements of the quantum theory; atomic spectra and atomic structure. Prerequisite: Physics 8; Mathematics 20. Evening.
- 114 *Statistical Physics* (3)
Introduction to the applications of both classical and quantum statistics to the physics of solids, liquids, and gases. Topics discussed include fluctuations in gases and liquids, equipartition of energy, specific heats of solids, and experimental errors. Prerequisite: Physics 113. Evening.
- 123 *Nuclear Physics* (3) Gamow
Structure and stability of atomic nuclei, spontaneous transformations, nuclear reactions, astrophysical applications, nuclear fission. Prerequisite: Physics 113. Evening.
- 124 *Modern Cosmology* (3) Gamow
Theory of gravitation and cosmological models; expanding universe; galaxies; energy sources and evolution of stars; cosmogony. Prerequisite: Physics 123; Mathematics 132. 1954-55 and alternate years. Evening.
- 128 *Sound* (3) Cheney
Production, propagation, and detection of sound waves; vibrations of sounding bodies; acoustic instruments and acoustic measurements. Prerequisite: Physics 8; Mathematics 20. Evening. (Also offered 1953 summer term.)

- 132 *Electronics* (3) Brown and Staff
The phenomena of electron emission from solids; the physical properties of electron tubes, and the principles underlying their basic applications. Prerequisite: Physics 8 and 55, and Physics 105 or Electrical Engineering 10. Material fee, \$9. Lecture (3 hours); laboratory (2 hours)—afternoon and evening sections.
- 133 *Electronic Circuits* (3) Brown
A continuation of Physics 132. Includes basic radiofrequency applications of electron tubes, and special types of tubes such as klystrons, resonators, and magnetrons. Lectures and problems. Prerequisite: Physics 132; Electrical Engineering 107. Morning.
- 136 *Electrical Conduction in Gases* (3) Brown
Fundamental theory and principal applications. Ionization currents, Townsend currents, and plasma currents; ion sheaths and probe measurements; glow discharges, arcs, sparks; ionization chambers, counter tubes, vacuum gauges, glow lamps, thyratrons, and ignitrons. Prerequisites: Physics 8; Mathematics 20. (Not offered in 1953-54.)
- 155-56 *Advanced Physical Measurements* (3-3)
Optional programs of experiments in electricity and magnetism, optics, or atomic physics. Corresponding prerequisites are Physics 105, 106, or 113. In addition, Physics 55 is a general prerequisite. Material fee, \$9. Saturday.
- 191x *Nuclear Reactors* (3) Beckerley
Neutron physics: sources of neutrons, neutron reactions, slowing down and diffusion; introduction to transport theory; fission process; reactor types; basic theory of homogeneous and heterogeneous reactors, including specific numerical studies from recent publications. Prerequisite: Physics 8; Mathematics 20. (Not offered in 1953-54.)

THIRD GROUP

- 211-12 *Classical Physical Theory* (3-3) Cheney
Fall term: dynamics of systems of particles and of rigid bodies; generalized coordinates. Spring term: dynamics of elastic bodies and fluids; electromagnetic field theory. Prerequisite: Physics 101 and 105; Mathematics 132 and 171. Evening.
- 213-14 *Electromagnetic Radiation* (3-3) Brown
Electromagnetic theory as applied to light and radio waves, with especial consideration given to "micro-waves". Prerequisite: Physics 105 and Mathematics 132, or the equivalent. 1953-54 and alternate years, evening.
- 215x *Physics of the Solid State* (3)
Theory and experimental techniques connected with the principal properties of the various solid types. Topics to be discussed include the structure of solids, their thermal and mechanical properties, the electronic behavior of metals, semi-conductors, etc., and the magnetic and optical properties of solids. Prerequisite: Physics 114. Evening.

- 217 *Advanced Thermodynamics* (3) Gamow
 Axiomatic formulation of thermodynamics, thermodynamical potentials and equilibria, Third Law of Thermodynamics, relativistic thermodynamics, the method of Gibbs. Prerequisite: Physics 102, 114; Mathematics 132. 1953-54 and alternate years. Evening.
- 218 *Quantum Statistics* (3) Gamow
 Statistical theory based on the indistinguishability of particles; Bose-Einstein and Fermi-Dirac statistics; applications to electron gas, liquid helium, etc. Prerequisite: Physics 217. 1953-54 and alternate years, evening.
- 221 *Wave Mechanics* (3) Gamow
 Criticism of classical ideas of mechanics and a formulation of wave-mechanical equations; matrix mechanics and its relation to wave mechanics; applications to various problems of atomic, molecular, and nuclear Physics. Prerequisite: Physics 113-14 and 211-12. 1954-55 and alternate years, evening.
- 222 *Quantum Electrodynamics and Field Theories* (3) Gamow
 Relativistic wave equations, quantization of electromagnetic fields, interaction between matter and radiation, elementary particles and their transformations. Prerequisite: Physics 221. 1954-55 and alternate years. Evening.
- 255-56 *Graduate Laboratory* (4-4) Brown
 Special topics. One term of this course is required of all Master's candidates in physics. Not open to undergraduates. Material fee, \$9 a term. Saturday.
- 291-92 *Seminar: Recent Developments in Physics* (1-1) The Staff
 Individual investigations of special problems. All students registered for a Master's degree in physics are expected to attend this seminar during residence for the degree, and to take part in its programs. Credit for participation in the seminar work is obtained by registering for this course during the last two terms of residence; this credit, however, is based upon the seminar work during the entire period of residence. Alternate weeks, evening.
- 299-300 *Thesis* (3-3) The Staff
 Time and fees to be arranged.

PHYSIOLOGY

Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*
 Chester Elwood Leese, Ph.D., *Professor of Physiology, Executive Officer*
 Joseph William Still, M.D., M.P.H., *Assistant Professor of Physiology*
 Hyman Erwin Steinman, M.D., *Lecturer in Physiology*
 Katherine Virginia Greene, A.M., *Instructor in Physiology*
 Charles Arthur Toompas, A.M., *Instructor in Physiology*
 Louis Pat Munan, M.S., *Associate in Physiology*
 William Spector, A.M., *Associate in Physiology*

- 115 Physiology (3)** Leese
 Lectures for nonmedical students covering the fundamentals of physiology in its various subdivisions. Prerequisite: one year of general science or one term of a biological science. Section A: Tues. and Thurs., 8:45 to 10 A.M.; section B: Tues. and Thurs., 5:10 to 6:25 P.M.
- 117 Experimental Physiology (1)** Greene and Staff
 Laboratory exercises in the fundamentals of physiology, for nonmedical students. Prerequisite or concurrent registration: Physiology 115 or the equivalent. Material fee, \$15. Sat., 9:10 to 12 A.M.
- 120 Physiology of Endocrine Activity (2)** Albritton, Munan
 For nonmedical students. The circulatory, metabolic, reproductive, growth, and other adaptations, immediate and long term, accompanying and affecting endocrine activity. Prerequisite: Physiology 115 or the equivalent. Tues. and Thurs., 6:10 P.M.
- 130 The Psycho-physiology of Personality (2)** Leese
 For nonmedical students. Lectures on the genesis and expression of personality, with emphasis on the physiological approach. Prerequisite: Physiology 115 or the equivalent and general psychology. Tues. and Thurs., 5:10 P.M.
- 150 Advanced Physiology** The Staff
 One hundred twenty-five physiological lectures and one hundred twenty-five laboratory hours devoted to the major divisions of the subject. For medical students.
- 201-2 Experimental Method (1-1)** Albritton
 For nonmedical graduate students. Design of controlled experiments in medical or biological investigation; errors in design; criticism and judgment of evidence; and tests of the statistical significance of experimental results. Sat., 9:00 A.M.
 Physiology 201X, same as 201, offered spring term.
- 211-12 Problems in Physiology (arr.)** The Staff
 For nonmedical graduate students. Open to undergraduate students with the approval of the Department. Prerequisite: Physiology 115 and 117, or the equivalent. Time and credits to be arranged.

- 221-22 *Physiology Seminar (1-1)* The Staff
For nonmedical students undertaking graduate work in physiology.
Prerequisite: Physiology 115 and 117, or the equivalent. Weekly throughout the year.
- 231 *Advanced Physiology of Circulation and Respiration (4)* Albritton, Leese, and Staff
For nonmedical graduate students. Lectures on blood, heart, circulation, tissue water, respiration, and acid-base balance. Four hours a week, to be arranged.
- 234 *Advanced Physiology of Nutrition, Metabolism, and Excretion (2)* Leese, Still, Steinman
For nonmedical graduate students. Lectures on nutrition, digestion, metabolism, excretion, and temperature regulation. Two hours a week, to be arranged.
- 236 *Advanced Physiology of the Endocrine Glands and Reproduction (1)* Albritton, Still, and Staff
For nonmedical graduate students. Lectures on ductless glands, hormones, humoral agents, and reproduction. One hour a week, to be arranged.
- 238 *Advanced Physiology of the Neuro-Muscular System (2)* Leese
For nonmedical graduate students. Lectures on sensory reception, central nervous processes, somatic and visceral motor activity, and the behavior of smooth and striped muscle. Two hours a week, to be arranged.
- 240 *Advanced Experimental Physiology (3)* The Staff
For nonmedical graduate students. Laboratory work only. Correlated with the lectures in courses 231-238. Material fee, \$36. Nine hours a week, to be arranged.
- 295-96 *Research (arr.)* Albritton, Leese, and Staff
Material fee, \$12 a credit hour. Time and credits to be arranged.
- 299-300 *Thesis (3-3)* Albritton, Leese

POLITICAL SCIENCE

Warren Reed West, Ph.D., *Professor of Political Science*

*John Withrow Brewer, Ph.D., *Professor of International Law, Executive Officer*

Arlin Rex Johnson, Ph.D., *Professor of Public Administration*

William Crane Johnstone, Jr., Ph.D., *Professorial Lecturer in Political Science*

Karl Ernest Stromsem, Ph.D., *Professorial Lecturer on Public Administration*

Fred Latimer Hadsel, Ph.D., *Professorial Lecturer in Political Science*

Wolfgang Herbert Kraus, Dr. Jur., S.J.D., *Associate Professor of Political Science*

Howard Rowland Ludden, A.M., *Assistant Professor of Political Science*

William George Torpey, Ph.D., *Lecturer on Public Administration*

Floyd Millard Riddick, Ph.D., *Lecturer in Political Science*

Thomas Ewing Cotner, Ph.D., *Lecturer in Political Science*

Harvey Porter Hall, A.M., *Lecturer in Political Science*

John Samuel Myers, Ph.D., *Lecturer on Public Administration*

Harold Seidman, Ph.D., *Lecturer on Public Administration*

Bachelor of Arts with a major in Political Science (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College stated on pages 60-61, including Political Science 9-10. Required: in addition to the general requirements stated on pages 75-80, thirty credit hours from the following groups distributed as follows: twelve hours from Group A; six hours from Group B; six hours from Group A, B, or C; six hours from Group A, B, C, or D.

Group A: Political Science 111, 112, 117-18, 121-22. Group B: Political Science 171, 172, 181-82. Group C: Political Science 104, 120, 124, 141, 145, 146, 151-52, 161-62, 175-76, 191, 194. Group D: Political Science 127, 128, 129, 130.

Students interested in preparing for graduate work in Public Administration will consult the Executive Officer of the Department for modifications of the above requirements.

Master of Arts in the field of Political Science (Columbia College).—Prerequisite: a Bachelor of Arts degree with a major in Political Science at this University, or the equivalent. Required: the general requirements as stated on pages 81-84. The thirty hours of required work must be approved in advance by the Adviser.

Bachelor of Arts and Master of Arts in Government in the field of Foreign Affairs, and Master of Arts in Public Administration with majors in General Administration and in Governmental Fiscal Administration (School of Government).—See pages 166-67, 171-72, and 173-74.

* On sabbatical leave spring term 1953-54.

FIRST GROUP

- 9-10 *Government of the United States** (3-3) The Staff
 Morning and evening sections. (Also offered 1953 summer term.)
 Political Science 9x, same as 9, offered spring term. Morning.
 Political Science 10x, same as 10, offered fall term. Morning.

SECOND GROUP *

- 104 *State and Local Government* (3) Ludden
 Not open to students who have credit for former Political Science 115.
 1954-55 and alternate years.
- 111 *The Governments of Europe: England, France, and Switzerland* (3) Kraus
 Evening.
- 112 *The Governments of Europe: Soviet Union, Germany, and Italy* (3) Kraus
 Evening.
- 113 *Political Problems of the British Commonwealth of Nations* (3) Kraus
 Summer term 1953.
- 117-18 *Political Theory: the Growth of Political Thought in the West* (3-3) Kraus
 Morning. (Also offered 1953 summer term—Political Science 118 (3).)
- 120 *Foundations of American Democracy: an Introduction to Political Thought in the United States* (3) Brewer
 (Not offered in 1953-54.)
- 121-22 *The Constitution of the United States* (3-3) West
 Morning.
- 124 *Legislative Organization* (3) Riddick
 Evening.
- 127 *Commercial Law: Contracts, Sales, Agency, and Bailments* (3) _____
 Afternoon and evening sections. (Also offered 1953 summer term.)
- 128 *Commercial Law: Negotiable Instruments, Property, Sales, Mortgages* (3) _____
 Morning and evening sections. (Also offered 1953 summer term.)
- 129 *Law in Relation to the Form of Business Units* (3) _____
 Evening.

* Political Science 9-10 is prerequisite to all second-group courses.

- 130 *Maritime Law* (3)
(Not offered in 1953-54.)
- 141 *The Development of Legal Institutions* (3)
Morning. Brewer
- 145 *Political Parties and Politics* (3)
Not open to students who have credit for former Political Science 116.
Evening. Ludden
- 146 *Political Pressures and Public Reactions* (3)
1954-55 and alternate years. Ludden
- 151-52 *Public Administration* (3-3)
Evening.
- 161-62 *Administrative Law* (3-3)
(Not offered in 1953-54.)
- 171 *International Politics* (3)
Morning and evening sections. (Also offered 1953 summer term.) Ludden
- 172 *International Organization: the United Nations* (3)
Morning and evening sections. (Also offered 1953 summer term.) Ludden
- 175x *International Politics in the Western Hemisphere* (3)
Evening. Davis
- 176x *Recent Trends in Latin American Politics and Government* (3)
Evening. Davis
- 181-82 *International Law* (3-3)
Political Science 181, morning and evening sections. Political Science
182, evening. (Also offered 1953 summer term.) Hall
- 191 *Government and Politics in the Middle East* (3)
Evening.
- 194 *Far Eastern Politics: Contemporary International Relations in the Pacific Area* (3)
Evening.
- THIRD GROUP
- 209-10 *Seminar: the Legislative Process* (3-3)
Training in handling original materials, research in legislation pertinent to administration, relationship between agency programs and legislatures. Evening. West
- 212 *Seminar: Comparative Government* (3)
Selected topics and problems in the field of comparative political and administrative institutions and in the politics of modern constitutional governments and dictatorships. Evening. Kraus

- 213 *Readings in Comparative Government* (3) Kraus
Readings and group discussions in the field of comparative political and administrative institutions, with particular attention to such topics as legislatures, executive departments, bureaucracy, political parties, etc. Evening.
- 217 *Seminar: Topics in Political Theory* (3) Kraus
Research and discussion primarily concerned with problems of modern political and constitutional theory, including the theoretical aspects of representative government, democracy, socialism, and totalitarianism. Evening.
- 220 *Reading Course in Political Theory* (3) Kraus
Readings and group discussions, principally in the field of modern political and constitutional theory since the seventeenth century. Evening. (Also offered 1953 summer term.)
- *226 *Problems of Governmental Reorganization* Torpey
(3)
Intensive consideration of the Hoover Commission reports and related documents, and their implications; obstacles and aids to reorganization movements. (Not offered in 1953-54.)
- *239-40 *Principles and Problems of Personnel Administration* (3-3) Torpey
Principles and functions of personnel administration; formal and informal organization for personnel management; staff relationships; evaluation of processes, procedures, and problems of personnel administration. Evening.
- *241 *Human Relations in Administration* (3) Torpey
Application of scientific principles to human relations in work situations; problems of communication, organization, etc. Evening.
- *251-52 *Budget Formulation and Execution* (3-3) Myers
Principles of federal budget formulation, problems and practices in the administration and execution of the budget at agency levels, processes of budgetary evaluation, performance budgeting and related activities. Evening.
- *253 *Staff Functions in Government Administration* Myers
(3)
Analysis of the nature of staff functions; program planning and non-fiscal control; legal aspects of programs and administrative management, fiscal management, and personnel management; integration aspects, etc. Evening.
- *255 *Administrative and Organization Theories and Problems* (3)
Theories and principles of administration, analysis of problems in administration and agency organization, problems of coordination, special forms of government organization, executive-legislative and federal-state relationships. Evening.

* Primarily for majors in the School of Government

- *257 *Public Policy Formulation and Administration* (3) Johnson
Planning activities of public agencies in their development of organizational and operating programs and policies, agency policy relationships with the Congress, cases illustrating the planning process in the determination of substantive programs at various levels.
Summer term 1953.
- *258 *Public Relations in Government Administration* (3) Stromsen
The philosophy, techniques, and devices utilized by various public administrative agencies in the development and administration of public programs at various levels; an evaluation of various public relations programs. Evening.
- *260 *Administration of Major Governmental Programs* (3)
Analysis of programs of various government agencies, legislative background and organization structure, relationships between headquarters and the field, relationships between top management and subordinate agencies, external relationships. Evening.
- *262 *Reading and Conference Course in Public Administration* (3) Torpey
Readings and conferences to provide familiarity with selected literature in the field of Public Administration. Evening.
- *263-64 *Analysis of the Administrative Process* (3-3) Stromsen
Open only to persons selected by governmental agencies for their intern programs. Evening.
- *265-66 *Workshop in Public Administration* (3-3) Johnson
Required of all Master of Arts candidates in Public Administration. Training in conference methods and in methods of investigation and oral and written presentation. Students apply to questions of public policy and practice the knowledge which they have acquired in course work and in individual reading, experience, or research. Evening.
(Also offered 1953 summer term—Political Science 265 (3).)
- *268 *Government Corporations* (3) Seidman
Place of the government corporation as an administrative unit; analysis of corporate purposes, organization, legal status, controls, revenue sources, etc.; relationship to the legislative branch, administrative departments, and the public. Evening.
- 271-72 *Problems in International Politics and Organization* (3-3) Hadsel
A seminar designed to develop techniques of research in recent international affairs, and to examine major developments in international politics and organizations, such as the United Nations and specialized agencies. Evening.

* Primarily for majors in the School of Government.

- *274 *Methods and Objectives of Foreign Policy* (3) Hadsel
Systematic examination of the objectives of foreign policies of the major powers, with particular attention to the political, propaganda, economic, and military methods used to pursue these objectives. Evening.
- 277-78 *Seminar: Latin American Politics and Government* (3-3) Cotner
Advanced survey and analysis of the development and operation (domestic and international) of the governmental institutions of the Latin American countries, in the context of the particular conditions of the area. (Not offered in 1953-54.)
- *279-80 *Reading Course in International Affairs* (3-3) Hadsel
Directed reading and discussion of basic materials designed to stimulate mature investigation of particular problems in the nature and development of international law and politics; the growth and operation of international organizations. Political Science 279, evening. (Political Science 280 not offered in 1953-54.)
- 281-82 *Seminar: International Law and Relations* (3-3) Brewer
Research topics in the public law of nations, with special attention to problems of pacific settlement, sanctions, war, neutrality, and state jurisdiction, and to their political implications. Political Science 281, evening. (Political Science 281 also offered 1953 summer term. Political Science 282 not offered 1953-54.)
- 293-94 *Seminar: International Politics and Government in the Pacific Area* (3-3) Johnstone
Research and analysis of the major patterns of development in internal and international politics of the area, with advanced study of the governmental institutions of the Far East. (Not offered in 1953-54.)
- 295 *Reading Course in Far Eastern Politics and Governments* (3) Johnstone
Advanced directed readings in the principal literature concerning internal and external political activities of the countries of Asia. (Not offered in 1953-54.)
- 299-300 *Thesis* (3-3) The Staff

* Primarily for majors in the School of Government.

PSYCHIATRY

- Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry, Executive Officer*
 Solomon Katzenelbogen, M.D., *Clinical Professor of Psychiatry*
 Addison McGuire Duval, M.D., *Clinical Professor of Psychiatry*
 Sidney Berman, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
 Morris Kleinermann, Ch.D., M.B., *Assistant Clinical Professor of Psychiatry*
 Leon Yochelson, A.B., M.D., *Assistant Clinical Professor of Psychiatry*
 Henry Prather Laughlin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
 Marshall de Graffenried Ruffin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*
 Norman Taub, B.S., M.D., *Associate in Psychiatry*
 William Green Cushard, M.D., *Associate in Psychiatry*
 Harold Corson, M.D., *Associate in Psychiatry*
 David Eden, A.B., M.D., *Clinical Instructor in Psychiatry*
 Clarence Bunge, B.S., M.D., *Clinical Instructor in Psychiatry*
 Robert Milton Greenberg, A.B., M.D., *Clinical Instructor in Psychiatry*
 John Joseph Blasko, B.S., M.D., *Clinical Instructor in Psychiatry*

- 165 *Dynamics of Personality Development* Berman
 An orientation course in the anatomical, physiological, and psychological growth and development of personality. Consideration of characteristics of structure, function, and development of the personality leading to normal behavior as a basis for the study of the pathological. Evaluation of interpersonal relationships. One hour a week.
- 178 *Psychopathology* The Staff
 Manifestations and understanding of various mental mechanisms and abnormal reaction-types, preceded by history of development of psychopathology and illustrated with case material. One hour a week.
- 266 *Psychiatry* Overholser
 History, etiology, symptoms, course, and treatment of the major psychoses with emphasis on the dynamics involving the person as a whole. One hour a week.
- 268 *Demonstration Clinics* Cushard
 Presentation of clinical cases of major mental illnesses and primary behavior disturbances, correlating with Psychiatry 266. Each student examines patients under supervision. Three hours a week. St. Elizabeths Hospital.

271 *Psychosomatic Aspects of General Medicine* Katzenelbogen

Somatic disorders of psychogenic origin. The role of personality reactions in functional and organic disorders. One hour a week.

324 *Psychoneurosis* Laughlin

Etiology, psychopathology, clinical aspects, and treatment of various types of psychoneuroses. One hour a week. Medical Conference Room, Gallinger Hospital.

431-32 *Clinical Clerkship* Duval, Kleinerman, Yochelson, Ruffin, Taub, Corson, Pallister, Eden, Bunge, Greenberg

Supervised examination, diagnosis, and treatment of ambulatory borderline cases in University Hospital and hospitalized cases in St. Elizabeths Hospital. Conferences for discussion of cases. Clinical application of psychiatric principles to general medical practice is stressed. Three weeks divided service. University Hospital Inpatient and Outpatient Psychiatric clinics and St. Elizabeths Hospital.

PSYCHOLOGY

Mitchell Dreese, Ph.D., *Professor of Educational Psychology*
 Thelma Hunt, Ph.D., M.D., *Professor of Psychology, Executive Officer*
 Henry Furness Hubbard, Ph.D., *Adjunct Professor of Psychology*
 Clarence Daniel Leatherman, Ph.D., *Professorial Lecturer in Psychology*
 Curtis Edward Tuthill, Ph.D., *Associate Professor of Psychology*
 Don Carlos Faith, Ph.D., *Associate Professor of Educational Psychology*
 Willard Edmund Caldwell, Ph.D., *Associate Professor of Psychology*
 James Norman Mosel, A.M., *Associate Professor of Psychology*
 Bernard Hayman Fox, Ph.D., *Assistant Professor of Psychology*
 Ewing Lakin Phillips, Ph.D., *Lecturer in Psychology*
 Margaret Ives, Ph.D., *Lecturer in Psychology*
 Roland Henry Tanck, A.M., *Instructor in Psychology*

Bachelor of Arts with a major in Psychology (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60, including Psychology 1 and 2 or 22. The general requirements for the degree are stated on pages 75–80. The sixty required credit hours must include twenty-four hours in Psychology above 2 or 22, including Psychology 29 or 151, 98, 131, 191, and 196; Statistics 53; and Physiology 115 or Psychology 118.

Master of Arts or Master of Science in the field of Psychology (Columbia College).—Prerequisite: the degree of Bachelor of Arts with a major in Psychology at this University, or the equivalent. Required: the general requirements for the degree are stated on pages 81–84. Of the twenty-four required credit hours (exclusive of the thesis), a minimum of eighteen must be in third-group courses; a minimum of twelve must be in psychology, including Psychology 201 and 202; twelve may be in related fields approved by the Department.

Master's programs are available in the following fields of concentration: (1) tests and measurements, (2) counseling and guidance, (3) clinical—abnormal, (4) social, (5) personnel, (6) experimental, and (7) personality. For detailed requirements consult the Executive Officer of the Department.

Bachelor of Arts in Government with a major in Business Administration (Personnel Management option) (School of Government).—See page 168.

Master of Arts in Personnel Administration or Master of Arts in Government with a specialty in Vocational Counseling (School of Government).—See pages 174–75, 173.

Master of Arts in Education in the fields of Employee Training and of Guidance (School of Education).—Prerequisite: a Bachelor's degree from an accredited institution and two years of successful teaching experience. The requirements for the degree are stated on pages 156–57.

FIRST GROUP

I General Psychology* (3)

The fundamental principles underlying human behavior. and evening sections. (Also offered 1953 summer term.)

The Staff
Morning

* Psychology 1 is prerequisite to all other courses in Psychology.

Psychology 1x, same as 1, offered spring term. Morning and evening sections.

- 2 *Applied Psychology* (3) Caldwell, Mosé
The applications of psychology in business, industry, medicine, law, guidance, education, and social problems. Morning and evening sections. (Also offered 1953 summer term.)
Psychology 2x, same as 2, offered fall term. Morning and evening sections.

- 22 *Introduction to Educational Psychology* (3) Faith
Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. Mornings. (Also offered 1953 summer term.)
Psychology 22x, same as 22, offered fall term. Evening.

- 29 *Child Psychology* (3) Tanck
A genetic approach to the study of the child. Special emphasis is placed on the socialization process, learning, and the child's view of the world. Evening. (Also offered 1953 summer term.)
Psychology 29x, same as 29, offered spring term. Morning.

- 98 *Abnormal Psychology* (3) Hunt, Tanck
The causes, diagnosis, treatment, and prevention of the various types of maladjustments and mental disorders. Prerequisite: 6 credits in psychology, or 3 credits in psychology and 6 credits in a biological science. Morning. (Also offered 1953 summer term.)
Psychology 98x, same as 98, offered fall term. Morning and evening sections.

SECOND GROUP *

- 118 *Physiological Psychology* (3) Fox
Structure, function, and phylogeny of receptors, nervous system, and effectors as mediators of behavior, including drives, learning, and emotions. Morning.

- 121 *Educational Psychology* (3) Faith
Advanced course in educational psychology. Open each term on the individual study plan to a limited number of students. Time to be arranged. (Also offered 1953 summer term.)

- 129 *Introduction to Counseling and Guidance* (3) Dreese
A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling. Evening. (Also offered 1953 summer term.)

- 131 *Psychological Tests* (3) Tanck
A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$5. Morning. (Also offered 1953 summer term.)
Psychology 131x, same as 131, offered spring term. Evening.

* Six credits in first group courses are prerequisites to all second group courses.

- 144 **Personnel Psychology (3)** Moses
The applications of psychology to personnel work in education, business, industry, and government. Afternoon. (Also offered 1953 summer term.)
Psychology 144x, same as 144, offered fall term. Evening.
- 151 **Social Psychology (3)** Tuthill
The social foundations of attitudes and behavior. Individual adjustment to group situations, such as the family, school, fraternity, and occupation. The psychological bases of race prejudice, nationalism, and war. Morning. (Also offered 1953 summer term.)
Psychology 151x, same as 151, offered spring term. Evening.
- 156 **Psychology of Propaganda and Public Opinion (3)** Tuthill
The psychology of opinion formation, the measurement of opinion, the social determinants of attitudes, the psychological processes in propaganda, the bases of receptivity to propaganda, psychological warfare. Evening. (Also offered 1953 summer term.)
- 161 **Comparative Psychology (3)** Caldwell
A survey of psychological processes in infrahuman organisms, with special emphasis on the evolution of animal behavior from the lowest forms to man. Accompanied by laboratory work. Material fee, \$9. Afternoon.
- 171 **Psychology of Personality (3)** Caldwell
Contemporary approaches to the study of personality. Prerequisite: 12 credits in psychology, including Abnormal Psychology. Morning.
- 191 **Experimental Psychology (3)** Tuthill
The application of experimental methods to various psychological problems. Prerequisite: 12 credits in psychology and an elementary course in statistics. Material fee, \$9. Afternoon.
Psychology 191x, same as 191, offered spring term. Lecture, evening; laboratory, afternoon and evening sections.
- 192 **Problems in Experimental Psychology (3)** Caldwell, Fox
Opportunity for work on individual experimental projects. Prerequisite: Psychology 191. Open each term to a small number of students by permission of the instructor. Time to be arranged.
- 193-94 **Readings in Psychology (3-3)** The Staff
Supervised readings on specific topics in psychology; with conferences; for undergraduate majors. Open only to seniors with 18 or more credits in psychology with a quality point index of 3.00 or higher. Special permission of staff member under whom course is to be taken is necessary. Time to be arranged. (Also offered 1953 summer term.)
- 196 **History and Systems of Psychology (3)** Caldwell
A survey of the contemporary schools of psychology. Prerequisite: 12 credits in psychology. Evening.

THIRD GROUP *

- 201 *Seminar: Advanced General Psychology (3)* Fox
General review of the field for graduate students with an intensive study of selected problems. Required in all graduate programs. Afternoon.
Psychology 201x, same as 201, offered spring term. Evening.
- 202 *Psychological Research Methods and Procedures (3)* Fox
Required of all Master of Arts candidates in Psychology. Prerequisites: Experimental Psychology and Statistics. Afternoon.
Psychology 202x, same as 202, offered fall term. Evening.
- 204 *Contemporary Developments in Psychology (3)* Fox
Certain modern developments are treated, e.g., action research, Eysenck's personality investigations, various new theories, P and Q techniques, etc.
Summer term 1953.
- 205-6 *Field Work in Psychology (3-3)* The Staff
Supervised field work in agencies providing psychological service. Admission by permission of the Executive Officer of the Department. Time to be arranged. (Also offered 1953 summer term—Psychology 205 (3).)
- 207-8 *Readings in Psychology for Graduate Students (3-3)* The Staff
Supervised readings with conferences on specified topics in psychology. Time to be arranged. (Also offered 1953 summer term—Psychology 207 (3).)
- 209x *Seminar: Psychology of Motivation (3)* Tuthill
A consideration of various theoretical approaches to the psychology of motivation and systematic concepts and experimental findings deriving from each approach. 1954-55 and alternate years.
- 212 *Seminar: Personality Evaluation by Projective Techniques (3)* Ives
Evening.
- 213 *Seminar: Clinical Psychology (3)* Ives
A study of the clinical applications of non-projective tests. Evening.
- 217 *Seminar: Experimental-Clinical Psychology (3)* Phillips
A critical review of the experimental and theoretical works of Pavlov, Anderson and Parmenter, Gantt, Masserman, and the Yale group on laboratory studies of clinical phenomena. Prerequisites: Experimental Psychology, Statistics, and nine credit hours in courses related to clinical psychology. (Not offered in 1953-54.)
- 220 *Seminar: Abnormal Psychology (3)* Hunt
An intensive study of a selected problem in the field of abnormal psychology. Evening.

* Open only to graduate students with 18 or more credits in psychology, except by special permission of Instructor and Executive Officer of the Department.

- 223 *Seminar: Learning* (3) Fox
Covers theories of learning. Evening.
- 225 *Seminar: Mental Hygiene* (3) Hunt
A survey of the recent literature in social psychology and anthropology as they relate to the impact of society on the mental hygiene of the individual. Individual mental health problems are viewed in terms of the social context in which they occur and are treated. Evening. (Also offered 1953 summer term.)
- 226 *Seminar: Clinical Psychology of Childhood* (3) Hunt
A survey of children's behavior and personality disorders. Special emphasis is placed on therapy and the techniques of interviewing and testing children. Evening. Special
- 227x *Seminar: Counseling and Guidance* (3) Dreese
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements and Psychology 129 or the equivalent. Evening.
- 228 *Seminar: Techniques of Counseling* (3) Dreese
Specific types of vocational, educational, and personal counseling problems approached through the case method. Prerequisite: recent previous course in counseling and guidance and familiarity with individual analysis methods. Evening.
- 229x *Seminar: Occupational and Educational Information* (3) Faith
Designed to acquaint vocational and educational counselors with the basic occupational and educational information necessary in counseling. Sources of data and techniques of collecting, analyzing, and disseminating for purposes of guidance. Evening.
- 231 *Test Construction* (3) Hunt
The principles underlying test construction; statistical techniques in the construction, evaluation, and standardization of psychological, educational, and vocational tests. Prerequisite: a course in tests and measurements and a course in statistics. Evening.
- 232 *Research: Test Construction* (3) Hunt
Individual projects in construction and evaluation of psychological, educational, or vocational tests. Prerequisite: Psychology 231. Open each term on individual study plan to a small number of students by permission of instructor. Time to be arranged.
- 233 *Individual Psychological Testing* (3) Tanc
Instruction and practice in giving of the Binet Test and the Wechsler-Bellevue Test. Emphasis is placed on testing children and adolescents. Prerequisite: an elementary course in tests and measurements. Material fee, \$5. Afternoon.
- Psychology 233x, same as 233, offered spring term. Afternoon. Mosel
- 234 *Seminar: Test Theory* (3)
Evening.

- 236x *Seminar: Analysis of the Individual for Purposes of Counseling* (3) Faith
A detailed study of individual analysis techniques with practice in handling such methods. Prerequisite: an introductory course in educational or psychological measurements. Evening.
- 242x *Seminar: Personnel Psychology* (3) Hubbard
A study of the applications of psychology to various personnel procedures, for those interested in either government or industrial personnel work. Prerequisite: Psychology 144 or the equivalent. Evening.
- 244 *Seminar: Job Analysis and Evaluation* (3) Leatherman
Evening.
- 245 *Seminar: Employee Motivation and Morale* (3) Mosél
Application of the principles of primary group functioning and group-centered administration to the problem of motivating employees, building morale, and overcoming resistance. Emphasis is upon use of group dynamics and equalitarian leadership methods. Summer term 1953.
- 246x *Seminar: Personnel Measurement Techniques* (3) Mosél
Detailed consideration of interviews, personal data analysis, tests, ratings and questionnaires in evaluating employability, job proficiency, and worker morale. Evening.
- 248 *Seminar: Psychological Market Research* (3) Mosél
Techniques and results in the analysis of consumer behavior. The measurement of advertising effects, consumer surveys, acceptance testing, product design, forecasting audience response to media. Evening.
- 251 *Seminar: Advanced Social Psychology* (3) Tuthill
Current research and theory in social psychology: group dynamics, ego-involvements, action research, and social interaction theory. Evening.
- 254 *Seminar: Group Dynamics* (3) Tuthill
The experimental study of small groups; autocratic and democratic group climates; interaction process analysis; Lewin's field-theoretical approach to individual and group processes. Evening. (Also offered 1953 summer term.)
- 255x *Seminar: Techniques of Opinion and Attitude Measurement* (3) Tuthill
Methods of attitude measurement (interviews, questionnaires, scales, polls) as currently used by private and governmental investigators. The place of attitude studies in schools, industry, government, etc. Evening.
- 272x *Seminar: Theories of Personality* (3) Caldwell
A survey of the various theories of personality, with emphasis upon theoretical problems and methodology in the field of personality study. Evening.

295-96 Research in Psychology (arr.)

Individual research by student, carried out under supervision of staff member. Time and credits to be arranged. (Also offered 1953 summer term—Psychology 295 (arr.).)

The Staff

299-300 Thesis (3-3)

Time to be arranged (Also offered 1953 summer term—Psychology 299 (3).)

The Staff

RADIOLOGY

William Woodrow Stanbro, M.D., *Professor of Radiology, Executive Officer*
 Solomon Rodney Bersack, B.S., M.D., *Assistant Clinical Professor of Radiology*
 Ludwig Carl Kroutil, A.B., M.D., *Assistant Clinical Professor of Radiology*
 Charlotte Patricia Donlan, A.B., M.D., *Assistant Clinical Professor of Radiology*
 Luther Weldon Brady, Jr., A.B., M.D., *Associate in Radiology*
 George Tievsky, M.D., *Clinical Instructor in Radiology*
 Uthaj Vincent Wilcox II, M.D., *Clinical Instructor in Radiology*
 Alvin Charles Wyman, A.B., M.D., *Clinical Instructor in Radiology*

- | | |
|--|-----------|
| 358 <i>Advanced Radiological Diagnosis</i>
Lectures and discussions. | The Staff |
| 449 <i>Clinical Studies</i>
Students assigned in rotation on a full-time basis for a specific period to the X-ray Department. | The Staff |
| 478 <i>Research</i>
Hours to be arranged. | The Staff |

RELIGION

Joseph Richard Sizoo, A.M., S.T.D., D.D., Litt.D., *Milbank Professor of Religion*

Lawrence Daniel Folkemer, Ph.D., *Associate Professor of Religion, Executive Officer*

Bachelor of Arts with a major in Religion (Columbia College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60. Required: the general requirements as stated on pages 75-80, including a minimum of eighteen credit hours in religion beyond first-group courses.

FIRST GROUP

9 *The Old Testament* (3)

A historical and literary approach to the study of the books of the Old Testament with special consideration given to the development of religious ideas, institutions, and outstanding personalities. Morning

10 *The New Testament* (3)

A study of the literature of the New Testament from the standpoint of occasion, purpose, dominant ideas, and permanent values. Special consideration given to life in the primitive Christian Church. Morning

59-60 *History of Religions* (3-3)

Fall term: Primitive and Eastern religions, ancient national religions, Confucianism, Taoism, Buddhism and sects, Hinduism, and Shintōism, —considering environment, personalities, religious thought, cultus, ethics, and modern trends. Spring term: Judaism, Christianity, and Islam; analysis of early development, thought, life, institutions, and expansion. Recent issues and trends examined. Morning and evening sections. (Also offered 1953 summer term—Religion 60 (3).) Folkemer

SECOND GROUP

102 *The Prophets, Their Times and Their Message* (3)

The development of prophetism in the Old Testament; cultural, economic, psychological, and religious factors in the movement; elements of lasting value in the prophetic teaching. A few of the prophets will be selected for particular study. Morning

103 *The Life and Thought of Jesus* (3)

A detailed study of the life and teachings of Jesus on the basis of a comparative analysis of the Gospel records; the significance of the message of Jesus for our own times. (Not offered in 1953-54.) Morning

104 *The Life and Thought of the Apostle Paul* (3)

Greek and Hebrew backgrounds of early Christianity, the Roman world of the first century, religious and social conditions affecting the

spread of Christianity, the life and journeys of Paul, Paul's teaching and presentation of the Christian faith, the place of the Pauline epistles in the New Testament.

Summer term 1953.

- 143 *The Basic Problems of Religion* (3) Folkemer**
A study of religious truth and experience, the existence and nature of God, the predicament of modern man, the problem of evil and suffering, eternal life, science and religion, the meaning of worship, religious views of history. (Not offered in 1953-54.)
- 151 *History of the Christian Church to the Reformation* (3) Folkemer**
A detailed study of the Christian Church from Apostolic days to the Reformation; relationship between church and state, doctrines, worship, expansion, rise of papacy, monastic movement, and pre-Reformation dissent. Morning.
- 152 *History of the Christian Church Since the Reformation* (3) Folkemer**
The origin and development of Protestantism; the Roman Catholic revival; developments among the Eastern churches; doctrines, worship, expansion, church and state, and relation to modern thought and life on the Continent and in Great Britain. Morning.
- 172 *Religion in American Culture* (3) Folkemer**
Growth of religious bodies and institutions in American culture; the heritage of religious freedom and diversity, religion and literature, revivalism and education, science and religious thought, divisions and cooperative movements in religion. (Not offered in 1953-54.)
- 185 *Classics of Religious Literature* (3) Folkemer**
A careful study of some of the world's treasures of religious literature from the standpoint of religious message, literary form, and permanent influence. Readings from *Bhagavadgita*; *The Bible*; *The Koran*; *City of God*, Augustine; *Imitation of Christ*, à Kempis; *Praise of Folly*, Erasmus; *Pilgrims Progress*, Bunyan; *Christian Liberty*, Luther, etc. Morning. (Not offered in 1953-54.)

ROMANCE LANGUAGES AND LITERATURES

Henry Grattan Doyle, A.M., LL.D., Litt.D., *Professor of Romance Languages*

Merle Irving Protzman, Ph.D., *Professor of Romance Languages*

Louis Clark Keating, Ph.D., *Professor of Romance Languages, Executive Officer*

Alan Thomas Deibert, A.M., *Professor of Romance Languages*

Irene Cornwell, Ph.D., *Professor of French*

Antonio Alonso, A.M., *Associate Professor of Spanish*

Rafael Supervía, Doctor en Derecho, *Associate Professor of Spanish*

James Willis Robb, A.M., *Assistant Professor of Romance Languages*

William Graham Clubb, A.M., *Assistant Professor of French*

Alberto Vázquez, Ph.D., *Lecturer on Spanish American Literature*

Bachelor of Arts with majors in (1) French Literature, (2) Spanish American Literature, and (3) Spanish Literature (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters curriculum in the Junior College. Required: the general requirements as stated on pages 75-80 and the grade "pass" on the major examination at the end of the senior year. The coordinated field of knowledge upon which the student will be examined includes the political, social, and cultural backgrounds of the literature studied; the writers; and their works. A reasonable proficiency in the spoken language is required. Majors in Romance Languages are strongly advised to study Latin, a knowledge of which is required for graduate work in most institutions. The Department of Romance Languages provides a proseminar in each of the major fields intended to assist the student in his preparation for the major examination.

Master of Arts in (1) French Literature, (2) Spanish American Literature, and (3) Spanish Literature (Columbian College).—Prerequisite: the degree of Bachelor of Arts in the appropriate field from this University, or the equivalent. Required: the general requirements as stated on pages 81-84. The thirty hours of required work must include a thesis, for which six hours credit are allotted. The remainder of the program is arranged in consultation with the student's major adviser.

Bachelor of Arts in Education with teaching fields in French and in Spanish (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the French option, page 152 or the Spanish option, page 155; the professional courses listed on pages 155-56.

FRENCH

FIRST GROUP

†1-2 First-year French (3-3)

For beginners. Grammar, composition, drill in pronunciation, translation of modern French prose. Morning and evening sections. (Also offered 1953 summer term.)

French 12, same as 1, offered spring term. Morning and evening sections.

The Staff

French 2x, same as 2, offered fall term. Morning and evening sections.

- †3-4 *Second-year French** (3-3) The Staff
Advanced grammar and composition, reading in modern French prose, oral practice, introduction to French civilization. Prerequisite: French 1-2 or two years of high school French. Morning, afternoon, and evening sections. (Also offered 1953 summer term.)

French 3x, same as 3, offered spring term. Morning and evening sections.

French 4x, same as 4, offered fall term. Morning and evening sections.

- 9-10 *French Conversation and Composition* (3-3) The Staff
Morning and evening sections.

- 51-52 *Survey of French Literature and Civilization** Deibert
(3-3)
Evening.

SECOND GROUP *

- 107 *French Readings for Non-major Students†* Clubb
Designed primarily for graduate students preparing for reading examinations. Undergraduates are admitted with the permission of the instructor. No academic credit for graduate students. Three hours credit for undergraduates. Evening.

French 107x, same as 107, offered spring term. Evening.

- 119-20 *French Literature of the Sixteenth Century* Keating
(3-3)

Prose, poetry, drama, and memoirs of the French Renaissance; Rabelais, Montaigne, Marot, La Pitié, etc. Class analysis of texts, collateral reading. Recommended: History 120. 1953-54 and alternate years, morning.

- 121-22 *French Literature of the Seventeenth Century* Protzman
(3-3)

History, philosophy, criticism, memoirs, letters, eloquence, drama, fiction, poetry. Class analysis of texts; collateral reading. 1954-55 and alternate years.

- 123-24 *French Literature of the Eighteenth Century* Deibert
(3-3)

History, philosophy, criticism, letters, drama, fiction, poetry, the "salons", the idea of progress, the idea of science. Class analysis of texts, collateral reading, lectures on literature and history. 1953-54 and alternate years, evening.

- 125-26 *French Literature of the Nineteenth Century* Keating
(3-3)

Romanticism and realism; fiction, poetry, drama, criticism. Class

* French 1-4 is required and French 51-52 is recommended as prerequisite to all second-group courses in French.
† Tuition fee, \$45.

analysis of texts, collateral reading, lectures on literature and history. 1954-55 and alternate years.

127-28 *French Literature of the Twentieth Century* Keating
(3-3)

Fiction, poetry, drama, criticism. Class analysis of texts, collateral reading, lectures on literature and history. 1953-54 and alternate years, evening.

199-200 *Proseminar: Readings for the Major in French Literature* (3-3) Protzman
Conferences and group discussions. Afternoon.

THIRD GROUP

227-28 *Seminar in Modern French Literature* (3-3) Cornwell
Prerequisite: a second-group course in French literature. 1953-54 and alternate years, afternoon.

229-30 *Seminar in Classical French Literature* (3-3) Protzman
Prerequisite: a second-group course in French literature. 1953-54 and alternate years, afternoon.

†249-50 *Old French** (3-3) Doyle
Phonology and morphology of Old French, with an outline of its development through Vulgar Latin; survey of French literature to the end of the thirteenth century. Prerequisite: a second-group course in French literature; an elementary knowledge of Latin. Time to be arranged.

†251-52 *Middle French** (3-3) Doyle
French literature of the fourteenth and fifteenth centuries. Class analysis of texts; collateral reading. Prerequisite: a second-group course in French literature. Knowledge of Old French desirable. Time to be arranged.

299-300 *Thesis* (3-3) The Staff

PORTUGUESE

FIRST GROUP

†1-2 *First-year Portuguese* (3-3)
For beginners. Grammar, composition, drill in pronunciation, translation of modern Portuguese prose. (Not offered in 1953-54.)

†3-4 *Second-year Portuguese* (3-3)
Advanced grammar and composition, reading of modern Portuguese prose, oral practice, introduction to Portuguese and Brazilian civilization. Prerequisite: Portuguese 1-2 or the equivalent. (Not offered in 1953-54.)

* Only one of the following courses: French 249-50, French 251-52, and Spanish 249-50 will be given in 1953-54, depending on demand.

SECOND GROUP

- 127-28 *Portuguese and Brazilian Literature* (2-2)
Evolution of the Portuguese language; outline of the literature of Portugal (fall term) and Brazil (spring term). Lectures, readings, written reports. Conducted in Portuguese. Prerequisite: Portuguese 3-4 or the equivalent. (Not offered in 1953-54.)

SPANISH

FIRST GROUP

- †1-2 *First-year Spanish* (3-3) The Staff
For beginners. Grammar, composition, drill in pronunciation, translation of modern Spanish prose. Morning and evening sections. (Also offered 1953 summer term.)

Spanish 1x, same as 1, offered spring term. Morning and evening sections.

Spanish 2x, same as 2, offered fall term. Morning and evening sections.

- †3-4 *Second-year Spanish** (3-3) The Staff
Advanced grammar and composition, reading of modern Spanish prose, oral practice, introduction to Hispanic civilization. Prerequisite: Spanish 1-2 or two years of high school Spanish. Morning and evening sections. (Also offered 1953 summer term.)

Spanish 3x, same as 3, offered spring term. Morning and evening sections.

Spanish 4x, same as 4, offered fall term. Morning and evening sections.

- 9-10 *Spanish Conversation and Composition* (3-3) Alonso and Staff
Morning and evening sections. (Also offered 1953 summer term.)

- 51-52 *Survey of Spanish Literature and Civilization** (3-3) Supervía
The social, artistic, and cultural background of Spanish civilization. Lectures, recitations, and informal discussion. Evening.

SECOND GROUP *

- 121-22 *Spanish Literature of the Golden Age* (3-3) Doyle
Cervantes, Lope de Vega, Calderón; the classic drama, fiction, the ballad, lyric poetry. Class analysis of texts, collateral reading, lectures on literature and history. 1954-55 and alternate years.

- †123-24 *Cervantes* (3-3) Doyle
Life and works of Cervantes. The Quixote, the Novelas Ejemplares, and other works. 1953-54 and alternate years, morning.

* Spanish 1-4 is required and Spanish 51-52 is recommended as prerequisite to all second-group courses in Spanish.

- 125-26 **Modern Spanish Literature (3-3)** Alonso
Prose and poetry of the eighteenth and nineteenth centuries. Class analysis of texts, collateral reading, lectures on literature and history. 1953-54 and alternate years, morning. 1954-55 and alternate years, evening.
- 127-28 **Contemporary Spanish Literature (3-3)** Supervía
Prose and poetry of the latter part of the nineteenth and of the twentieth centuries. Class analysis of texts, collateral reading, lectures on literature and history. 1953-54 and alternate years, morning.
- 153-54 **The Modernista Movement in Spanish America (3-3)** Vázquez
A study of the background, trends, and personalities of this movement. (Not offered in 1953-54.)
- 155-56 **Spanish American Literature to 1880 (3-3)** Vázquez
The literature of Spanish America from the colonial period to the latter part of the nineteenth century. Lectures, collateral reading, reports, and class analysis of important works. 1954-55 and alternate years, evening.
- 157-58 **Spanish American Literature Since 1880 (3-3)** Vázquez
The literature of Spanish America from 1880 to the contemporary period. Lectures, collateral reading, reports, and class analysis of important works. 1953-54 and alternate years, evening.
- 197-98 **Proseminar: Readings for the Major in Spanish American Literature (3-3)** Vázquez
Conferences and group discussions. Time to be arranged.
- 199-200 **Proseminar: Readings for the Major in Spanish Literature (3-3)** Alonso
Conferences and group discussions. Time to be arranged.

THIRD GROUP

- 225-26 **Seminar in Spanish Literature (3-3)** Alonso
Prerequisite: a second-group course in Spanish literature. 1953-54 and alternate years. Time to be arranged.
- 227-28 **Seminar in Spanish American Literature (3-3)** Vázquez
Prerequisite: a second-group course in Spanish American literature. (Not offered in 1953-54.)
- †249-50 **Old Spanish* (3-3)** Doyle
Literature and philology: *Poema del Cid*, *Libro de Buen Amor*, *Conde Lucanor*, etc.; Menéndez Pidal's *Manual de gramática histórica española* and Ford's *Old Spanish Readings*. Prerequisite: a second-group course in Spanish literature; an elementary knowledge of Latin. Time to be arranged.
- 299-300 **Thesis (3-3)** The Staff

* Only one of the following courses: French 249-50, French 251-52, and Spanish 249-50 will be given in 1953-54, depending on the demand.

SECRETARIAL STUDIES

Mildred Hollander Shott, A.M., *Assistant Professor of Secretarial Studies, Executive Officer*

Elizabeth Beachy Huff, Ed.M., *Associate in Secretarial Studies*

George Gera, A.M., *Associate in Secretarial Studies*

Associate in Arts (Junior College—two-year vocational curriculum in Secretarial Studies).—For curriculum, see page 65.

Bachelor of Arts in Education with a teaching field in Business Education (School of Education).—Prerequisite: the Education curriculum, page 62. Required: the Secretarial Studies option, page 150, and the professional courses listed on pages 155-56.

FIRST GROUP

- 1 **Elementary Typewriting (3)** Shott and Staff
Fundamental techniques of typewriting, basic styles of business letters, introduction to tabulation, and preparation of general office forms. Laboratory fee, \$6. Afternoon and evening sections.
Secretarial Studies 1x, same as 1, offered spring term. Evening.
- 2 **Intermediate Typewriting (3)** Shott and Staff
The business letter and its arrangement, advanced tabulation, manuscript typing, office forms, stencil cutting, and legal documents. Prerequisite: Secretarial Studies 1 or the equivalent; ability to type accurately at 30 words a minute. Laboratory fee, \$6. Afternoon and evening sections.
Secretarial Studies 2x, same as 2, offered fall term. Evening.
- 11 **Elementary Shorthand and Transcription (3)** Shott, Huff
A study of the principles of Gregg shorthand correlated with dictation and transcription. Minimum dictation speed of 60 words a minute attained. Laboratory fee, \$3. Morning and evening sections.
Secretarial Studies 11x, same as 11, offered spring term. Evening.
- 12 **Intermediate Shorthand and Transcription (3)** Shott, Gera
Review of the principles of Gregg shorthand. Dictation and transcription on general and specialized business subjects. Minimum dictation speed of 80 words a minute attained. Prerequisite: Secretarial Studies 11 or the equivalent; ability to take dictation at 60 words a minute. Laboratory fee, \$3. Morning and evening sections.
Secretarial Studies 12x, same as 12, offered fall term. Evening.
- 15 **Advanced Shorthand, Typewriting, and Transcription (3)** Shott
Dictation and transcription involving vocabularies in specific businesses. Minimum speed of 100 words a minute attained in dictation. Prerequisite: Secretarial Studies 12 or the equivalent. Laboratory fee, \$3. Morning and evening sections.

16 *Secretarial Shorthand, Typewriting, and Transcription* (3)

Dictation and transcription involving vocabularies used in the legal and medical professions. Minimum dictation speed of 120 words a minute attained. Prerequisite: Secretarial Studies 15 or the equivalent. Laboratory fee, \$3. Morning and evening sections.

Short

51 *Business Correspondence* (3)

Development of the technique of effective communication with reference to business letters and forms. Survey and analysis of current business literature. Evening.

Short

54 *Secretarial Practice* (3)

A thorough study of secretarial problems and procedures. Practice in the use of secretarial equipment and supplies. The study of secretarial personality and office relationships. Time to be arranged.

Short

SLAVIC LANGUAGES AND LITERATURES

Helen Zhemchuzhnaya Yakobson, B.S., *Assistant Professor of Russian,
Executive Officer*
Peter Zouboff, Ph.D., *Lecturer in Russian*

1-2 *First-year Russian* (3-3) Yakobson and Staff

A beginner's course in fundamentals of grammar and pronunciation with graded reading, oral drill, and written practice. Morning and evening sections. (Also offered 1953 summer term.)

3-4 *Second-year Russian* (3-3) Yakobson and Staff

Systematic review of grammar. Study of special problems of Russian morphology and syntax. Oral and written reports on assigned topics. Morning and evening sections.

9-10 *Russian Conversation* (3-3) Zouboff

Prerequisite: Russian 1-2, 3-4, and the permission of the instructor. Evening.

101 *Rapid Readings in Russian* (3) Yakobson

Readings and translations of classic and modern literary texts and periodical literature. 1953-54 and alternate years. Evening.

103 *Scientific Russian* (3) Yakobson

Reading and translation of technical texts. 1954-55 and alternate years. Evening.

SOCIOLOGY

Harold Loran Geisert, Ph.D., *Professor of Sociology, Executive Officer*
 Carr Bartleson Lavell, A.M., *Associate Professor of Sociology*
 Henry Davidson Sheldon, Ph.D., *Lecturer in Sociology*
 Francis Reddy Grady, M.S., *Lecturer in Sociology*

Bachelor of Arts with a major in Sociology (Columbian College—Departmental).—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 60, including Sociology 1-2. Required: the general requirements as stated on pages 75-80, including Sociology 172 and 181 and eighteen hours in second or third group courses in Sociology.

Master of Arts in the field of Sociology (Columbian College).—Prerequisite: the degree of Bachelor of Arts with a major in Sociology in this University, or the equivalent. Required: the requirements for the degree are stated on pages 81-84. The thirty hours of required work must include a minimum of eighteen hours in third-group courses.

FIRST GROUP

1-2 *Introductory Sociology** (3-3)

The origin and development of culture, man's social nature, types of groups and institutions, social processes, factors producing social problems, individual and social disorganization. Morning and evening sections. (Also offered 1953 summer term.) Lavell

SECOND GROUP

123 *Fields of Social Work* (3)

The nature and scope of social work, development of social work programs, functions of social case work, social group work, public welfare, community organization and social action. 1954-55 and alternate years.

124 *Public Welfare* (3)

The organization of public welfare—federal, state, and local; the care of various classes of dependents and methods of treatment; personnel, finance, and public relations. Grady

Summer term 1953.

126 *Urban Sociology* (3)

Types of cities; their origin, location, composition, functions, and problems; urban group life and personality; housing and other urban problems. Morning. Geisert

127 *Community Organization* (3)

The study of social interaction in American communities, factors making for disorganization, community leadership, methods of organizing social forces to meet community needs. Evening. Grady

* Sociology 1 is prerequisite to all other courses in Sociology.

- 131 *Social Institutions* (3) Sheldon
The origin and development of social institutions, basic needs producing institutional forms, structures and functions of principal institutions and their interrelationship. Evening.
- 132 *Marriage* (3) Lavell
The reasons for marriage, marriage laws, mate selection, courtship, husband-wife relations, factors in marital adjustment, marriage prediction and counseling. Morning.
- 133 *The Family* (3) Geisert
A study of the primitive and modern family, changing functions and roles of the family and its members, factors promoting disorganization, family crises, family reorganization. Morning.
- 134 *Sociology of Child Development* (3)
The socialization of the child through the home and other social institutions; the changing status of childhood, dependent and handicapped children, child labor. 1954-55 and alternate years.
- 135-36 *Crime and Delinquency* (3-3) Geisert
The nature and distribution of crime, factors producing criminal behavior, police systems, the criminal and juvenile courts, the prison system, probation and parole. Morning.
- 141 *Population Problems* (3)
The composition of population, theories of population growth, quantitative and qualitative differences in population groups, trends in population growth, population policies. 1954-55 and alternate years.
- 142 *Human Migration* (3)
Factors producing population movements, causes and consequences of international migrations, internal population redistribution, effects of selective migration. 1954-55 and alternate years.
Summer term 1953.
- 151 *Industrial Sociology* (3)
Interrelationships of industry and community; sociological analysis of work situation, labor movement, industrial leadership, and morale; and of the aged, ethnic, and woman worker. 1954-55 and alternate years.
- 162x *Social Movements* (3) Lavell
Major contemporary movements examined as aspects of social change and collective behavior. Designed to disclose competing ideologies and to show the way in which social movements develop. Morning.
- 164 *Social Control* (3) Sheldon
Informal and formal phases of human control; analysis of methods of control used in modern society and the situations in which they occur; policies and techniques of control. Evening.
- 172 *Contemporary Social Theory* (3) Geisert
A systematic study of the important schools of contemporary sociology, including recent European as well as American developments, and an evaluation of the scientific contribution of each school. Morning.

181 *Methods of Social Research* (3)

An analysis of social research techniques and the scientific method; the application of the case study, social survey, statistical, sociometric, and experimental methods to social data. Morning.

Geisert

THIRD GROUP

223 *Seminar: Social Structure* (3)

Development and general characteristics of social structure, the role of customs in determining forms of structure, analysis of status by types. 1954-55 and alternate years.

224 *Seminar: Current Trends in Sociology* (3)

Analysis and evaluation of structure-function theory of social systems; manifest and latent functions, and an appraisal of systematic theory in sociology. 1954-55 and alternate years.

227 *Seminar: Social Relations* (3)

General characteristics of social groups and their measurement, sociology of groups, evaluation of sociometry, and other techniques of group research. Evening.

Geisert

228 *Seminar: Mass Communication* (3)

The communication process; barriers to communication; structure and function of communication in society; content, control, support, and effects of mass communication. Evening.

Geisert

295-96 *Research* (arr.)

Time and credits to be arranged. (Also offered 1953 summer term.)

The Staff

299-300 *Thesis* (3-3)

Time to be arranged. (Also offered 1953 summer term.)

The Staff

SPEECH

Lubin Poe Leggette, A.M., *Depew Professor of Speech, Executive Officer*

George Francis Henigan, Jr., Ph.M., *Associate Professor of Speech*

Calvin Weir Pettit, Ph.D., *Associate Professor of Speech; Director of Speech Clinic*

Edwin Lockwood Stevens, A.M., *Associate Professor of Speech*

Edith Shores Surrey, A.M., *Assistant Professor of Speech*

Lee Sheward Bielski, A.M., *Assistant Professor of Speech*

William Harold Callahan, A.M., *Associate in Speech*

Bachelor of Arts with a major in Speech (Columbia College—Departmental).

—Prerequisite: the Arts and Letters curriculum in the Junior College, see page 62, including Speech 1, 2, 11, 32. Required: the general requirements as stated on pages 75–80, including the passing of a speech proficiency test early in the program, Speech 101, 131, 153, 175, and a minimum of twelve additional hours in second-group courses in the speech arts or speech science, as approved by the adviser.

FIRST GROUP

A *Speech Clinic*

Pettit and Staff

Individual or group lessons, without academic credit, for such speech difficulties as lisping, cleft palate, articulatory problems, and stuttering. Fee: for individual lesson, \$6; for group lesson, \$4. (Also offered 1953 summer term.)

B *American Speech for Foreign Students*

The Staff

Individual or group instruction without academic credit, in the formation of the sounds of spoken English, with emphasis on rhythm and inflection. The International Phonetic Alphabet is used. Fee: for individual lesson, \$6; for group lesson, \$4. (Also offered 1953 summer term.)

1 *Effective Speaking* (3)

Leggette and Staff

Preparation and delivery of extempore speeches; developing confidence and poise, body and voice control; selecting and organizing material. Recording fee, \$3. Morning, afternoon, and evening sections. (Also offered 1953 summer term.)

Speech 1x, same as 1, offered spring term. Morning, afternoon, and evening sections.

2 *Extempore Speaking* (3)

The Staff

A continuation of Speech 1, which is prerequisite, with emphasis on organization of material and elementary principles of persuasion. Morning and evening sections. (Also offered 1953 summer term.)

11 *Training the Speaking Voice* (3)

The Staff

Developing ease, naturalness, and clarity in the speaking voice. Analysis of individual voices through recordings. Phonetic approach to

the study of the sounds of English, the standards of speech. Class instruction in the problems of rate, volume, pitch, and equality. Recording fee, \$3. Morning, afternoon, and evening sections. (Also offered 1953 summer term.)

Speech 11x, same as 11, offered spring term. Morning and evening sections.

32 Oral Reading (3)

Reading to others, theory and practice in the problems of interpreting the printed page. Prerequisite: Speech 11 or the permission of the instructor. Recording fee, \$3. Morning and evening sections. (Also offered 1953 summer term.)

The Staff

SECOND GROUP

101 Voice and Phonetics (3)

A study of the International Phonetic Alphabet and its application to the student's own speech improvement; also personal application to such fields as theatre, public speaking, speech correction, radio, and foreign languages. Recording fee, \$3. Afternoon.

Pettit

102 Oral Interpretation of Literature (3)

Theory and practice in the problems of communicating meaning and emotion. Selections for study include poetry and prose. Prerequisite: Speech 32 or permission of the instructor. Recording fee, \$3. Afternoon.

Leggette

109 Radio Speaking and Production (3)

Radio speeches, interviews, and discussions; news reporting and interpreting; techniques of direction and production; plays; audience measurement. Prerequisite: Speech 32 or permission of the instructor. Recording fee, \$5. Evening.

Stevens

131 Group Discussion and Conference Leadership (3)

The process of thinking and problem solving in committees and small groups, and the methods of leading discussions and conferences. Prerequisite: six credit hours of speech or the permission of the instructor. Afternoon. (Also offered 1953 summer term.)

Henigan

136 Public Discussion and Debate (3)

Principles and types of public discussion and debate; practice in argumentative speaking on questions of current interest. Prerequisite: six credit hours of speech or the permission of the instructor. Afternoon.

Henigan

143 Persuasion (3)

An advanced course in public speaking with emphasis on audience analysis and audience psychology; preparation and delivery of persuasive speeches; study of current public speeches. Prerequisite: nine credit hours of speech. Evening.

Henigan

145-46 History and Criticism of Public Address (3-3)

A critical and historical survey of rhetorical theory and public address from Ancient Greece to the present. Prerequisite: nine credit hours of speech. (Not offered in 1953-54.)

Henigan

- 148 *Speeches for Special Occasions* (3) Stevens
The preparation and presentation of speeches of introduction, presentation, acceptance, welcome, nomination, and eulogy. Prerequisite: nine credit hours of speech. Morning.
- 153-54 *Play Production* (3-3) Callahan
A survey of the art of theatre in all its aspects, including a study of acting techniques, play direction, scenic design and general production problems; a study of the nature of theatre in society, with particular attention to the contemporary non-professional and regional theatre. Laboratory fee, \$5 a term. Afternoon.
- 166 *History of the Theatre* (3)
A general survey of the rise of the theatre, the Classical, Medieval, Renaissance, later English and Continental, and the Modern theatre. Admission by permission of the instructor. Afternoon.
- 169 *Creative Dramatics and Children's Theatre* (3)
A study of creative dramatics and its use as a learning tool, with problems and experience in producing children's plays. Evening.
- 175-76 *Speech Correction* (3-3) Pettit
A study of the causes of the disorders of speech with emphasis on methods in diagnosis and treatment of defective speech. Admission by permission of the instructor. Laboratory fee, \$5 a term. Evening.
- 177-78 *Clinical Practice in Speech Therapy* (1-1) Pettit
Case work in remedial speech. This course may be repeated for a total of three credit hours. Prerequisite: Speech 175. Time to be arranged. (Also offered 1953 summer term.)
- 180 *Speech Pathology* (3) Pettit
An advanced study of the causes and symptoms of the major physiogenic and psychogenic speech disorders. Admission by permission of the instructor. Evening.
- 182 *Introduction to Hearing Problems* (3) Pettit
A study of the field of audiology including anatomy of the ear, tests of hearing, speech reading, and auditory training. Admission by permission of the instructor. Laboratory fee, \$5. (Not offered in 1953-54.)
- 183-84 *Clinical Practice in Hearing Therapy* (1-1) Pettit
Case work with persons handicapped with hearing losses. This course may be repeated for a total of three credit hours. Prerequisite: Speech 182. Time to be arranged. (Also offered 1953 summer term.)

STATISTICS

Frank Mark Weida, Ph.D., *Professor of Statistics, Executive Officer*
 Everett Herschel Johnson, Ph.D., *Professor of Statistics*
 Solomon Kullback, Ph.D., *Lecturer in Statistics*
 *Chester Hayden McCall, Jr., A.M., *Instructor in Statistics*

Bachelor of Arts or Bachelor of Science with a major in Mathematical Statistics (Columbian College—Field-of-Study).—Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60 and 61. Electives must include Mathematics 12, 19, and 20, Statistics 91 and 92, and Philosophy 121 and 122.

Required: the general requirements stated on pages 75–80, including Statistics 117, 118, 155–56, 157–58, and 197–98; a minimum of twenty-four credit hours of approved second group courses in departments in the Division of Mathematics and the Physical Sciences or in departments in the Division of the Natural Sciences or in departments unrelated to Statistics; and the grade of "pass" on the major examination at the end of the senior year. For further details, consult the Adviser.

Master of Arts or Master of Science in the field of Mathematical Statistics (Columbian College).—Prerequisite: a Bachelor of Arts or Bachelor of Science degree, respectively, with a major in Statistics at this University, or the equivalent. Required: the general requirements as stated on pages 81–84. The required thirty credit hours, in addition to a thesis in Statistics, includes at least twelve credit hours to be selected from approved third group courses in Statistics. The remaining twelve credit hours may be selected from graduate work offered by departments in the Division of Mathematics and the Physical Sciences or by Departments in the Division of the Natural Sciences with the approval of the adviser.

Bachelor of Science in Engineering with an option in Statistics (School of Engineering).—For curriculum requirements, see pages 129–30 and 131.

Bachelor of Arts in Government and Master of Arts in Government with major in Business and Economic Statistics (School of Government).—See pages 169 and 173.

FIRST GROUP

The Staff

51 Introduction to Business and Economic Statistics (3)

Survey of elementary principles and procedures for presenting, analyzing, and interpreting statistical data; consideration of characteristic values; measures of variability, sampling processes, index numbers, time series analysis, and simple correlation. Prerequisite: one entrance unit in algebra. Laboratory fee, \$6. Lecture (2 hours)—morning and evening sections; laboratory (2 hours)—afternoon and evening sections. (Also offered 1953 summer term.) Evening.

Statistica 51x, same as 51, offered spring term.

* On national service leave.

52 Mathematics of Finance (3)

The Staff

Interest and discount, annuities, valuation of stocks and bonds, sinking funds, amortization, valuation of depletable assets, depreciation, building and loan associations. Prerequisite: one entrance unit in algebra. Morning and evening sections. (Also offered 1953 summer term.)

Statistics 52x, same as 52, offered fall term. Morning and evening sections.

53 Introduction to Statistics in Psychology and Education (3)

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, intelligence and other quotients, reliability and validity of tests, normal curve, correlation, elementary sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Laboratory fee, \$6. Lecture (2 hours)—morning and evening sections; laboratory (2 hours)—afternoon and evening sections. (Also offered 1953 summer term.)

Statistics 53x, same as 53, offered spring term. Evening.

†91-92 Principles of Statistical Methods* (3-3)

McCall

This course emphasizes the meaning, uses, and applications of: variates and attributes, measurement and enumeration, averages and dispersion, frequency distributions and their characteristics, errors of measurement and their control, index numbers, trends, cyclical relatives, purposive and random sampling in theory and practice and their errors and estimates, correlation in theory, practice, and applications. Prerequisite: one entrance unit in algebra. Laboratory fee, \$6 a term. Lecture (2 hours); laboratory (2 hours). Evening. (Also offered 1953 summer term.)

SECOND GROUP

105 Statistics in Psychology and Education (3)

The Staff

Advanced study of correlation and frequency analysis, sampling theory, factor analysis, and applications to specific problems utilizing case method of study insofar as possible. Original work is required of each student. Prerequisite: Statistics 53. Laboratory fee, \$6. Lecture (2 hours), laboratory (2 hours)—afternoon.

109 Managerial Statistics (3)

Johnson

Role of statistics and the contribution of statistical procedures in various phases of business management with emphasis on the need for and usefulness of the statistical method rather than the mechanics of analysis. Subject matter comprises sources and methods for collecting data, effective forms of presentation, techniques for summarizing and analyzing quantitative and qualitative information, interpretation of and inferences from available data. Admission by permission of the instructor or following Statistics 51. (Not offered in 1953-54.)

* Statistics 91-92 is for Statistics majors, for students in engineering and in the biological and physical sciences.

- 110 Quality Control Techniques (3)** Johnson
Characteristics: scientific basis; reduction in cost of inspection, rejections, and tolerance limits; quality as an attribute; distribution of quality characteristics; laws basic to control; statistical and maximum control; detection of lack of control. Admission by permission of the instructor or following Statistics 51. (Not offered in 1953-54.)
- 111 Business and Economic Statistics I (3)** Johnson
Statistical processes as related to particular types of problems encountered in business administration and economic research. Subject matter comprises characteristic values, measures of variability, sampling processes, sampling distributions, and simple correlation. Admission by permission of the instructor. Morning and evening sections.
- 112 Business and Economic Statistics II (3)** Johnson
Application of statistical methods to specific problems of business administration and economics. Subject matter comprises multiple and partial correlation, time series analysis, index numbers, business cycles, demand functions, and depreciation schedules. Prerequisite: Statistics 111 or the equivalent. Morning and evening sections.
- 117 Analysis of Variance (3)** McCall
The analysis of variance and covariance to segregate factors producing significant variation, a method to estimate experimental error in multiple classification with unequal class frequencies. Prerequisite: Statistics 91-92. Evening. (Also offered 1953 summer term.)
- 118 Correlation and the Chi-Square Test (3)** The Staff
Advanced study of simple, partial, and multiple correlation. Rank correlation, the method of contingency, and the problem of normal and non-normal populations. Tests of independence, likeness, and goodness of fit. Prerequisite: Statistics 91-92. Evening. (Also offered 1953 summer term.)
- †155-56 Mathematical Probability (3-3)** Weida
Definitions, enumeration of cases, total and compound probability, repeated trials, Bayes' theorem and postulate, Bernoulli's theorem and its experimental verification, mathematical expectation, law of large numbers and its applications. Prerequisite: Mathematics 20 and Statistics 91-92. Evening.
- †157-58 Mathematical Statistics (3-3)** Weida
Statistics as a science, types of problems, relative frequency and probability, binomial and multinomial distributions, Pearson system of curves, Gram-Charlier series, Cauchy distribution, correlation by regression method, Lexis theory of dispersion, generating functions, simple sampling theory, moments and semi-invariants. Prerequisite: or concurrent registration: Statistics 155-56. Evening.
- 195-96 Reading and Research in Business and Economic Statistics (3-3)** Johnson
Admission by permission of the instructor. Time to be arranged.

- †197-98 *Statistical Mathematics** (3-3) Weida
Matrix algebra, quadratic forms, contour integration, measure theory, Stieltjes integration, Cauchy theory of residues, n-dimensional geometry in flat spaces. Prerequisite: Mathematics 139 or the equivalent. Evening.

- 199-200 *Proseminar: Theoretical and Applied Statistics* Weida
(3-3)
In addition to the study of recent advances in statistical methods, this course is designed to coordinate the content of the baccalaureate major. Admission by permission of the instructor. Time to be arranged.

THIRD GROUP*

- 201 *Design of Experiments* (3) Weida
Relative merits of random, repeated, stratified, and double sampling; Fisher-Pitman method of randomization; randomized blocks; Latin squares; factorial design; confounding, partial confounding. (Not offered in 1953-54.)

- 202 *Theory of Estimation and Testing Hypotheses* Weida
(3)
Statistical hypotheses; maximum likelihood estimate; Markoff's best estimate; Neyman-Pearson theory of testing hypotheses; Bayes' theory; consistent, efficient, and sufficient statistics; theory of confidence intervals. (Not offered in 1953-54.)

- †203-4 *The Theory of Econometrics* (3-3) Johnson
Statistical methods applied to the analysis of production, supply, and demand; utility and disutility; interest and taxation; exchange. Stress is placed on the interpretation of results in terms of probability. Correlation and regression of time series. Admission by permission of the instructor. (Not offered in 1953-54.)

- 205-6 *Advanced Business and Economic Statistics* Johnson
(3-3)
Application of statistical methods to specific problems utilizing case method insofar as possible. Emphasis is placed on source materials, role of statistical methods, techniques of analysis, interpretation and presentation of results. Original work is required of each student. Prerequisite: Statistics 112 or the equivalent. (Not offered in 1953-54.)

- †257-58 *Advanced Mathematical Statistics* (3-3) Kullback
Mathematical basis of distribution functions, moments and cumulants, probability and likelihood, sampling distributions exact and approximate. Chi-square distribution, association and contingency, various conceptions of correlation, individual difference problem, time series, regression analysis, analysis of variance, theories of inference. Evening.

* Statistics 197-98 is prerequisite to all third group courses

- †259-60 *Advanced Mathematical Probability (3-3)* Kullback
 Modern theories and asymptotic laws; elementary theory of definite integration; limit theorems in probability; the contributions of Cramér, Frechet, Kolmogoroff, Khintchine. Prerequisite: Statistics 257-58 or the equivalent. (Not offered in 1953-54.)
- †263-64 *Statistical Inference (3-3)* Weida
 Sample space; methods for estimating population parameters; fiducial inference and its application to testing hypotheses; valid, efficient, and exact estimation; Student's distribution; variance distribution; sampling statistics, i.e., moments and cumulants used as estimates of population parameters and used to test hypotheses. Prerequisite: concurrent registration: Statistics 257-58 or the equivalent. (Not offered in 1953-54.)
- †265-66 *Multivariate Analysis (3-3)* Kullback
 Tests of significance, generalized variance and covariance, tests of independence, canonical and vector correlations, multivariate, normal distribution, generalized Student's ratio, problems of estimation, applications to factor analysis. Evening.
- †267-68 *Characteristic Functions (3-3)* Kullback
 Fourier integrals, set functions, inversion formulas, limit theorems; applications to the distribution problem in statistics. (Not offered in 1953-54.)
- †269-70 *Sequential Testing (3-3)* Kullback
 Efficiency of sequential tests, sequential probability ratio test, expected number of observations necessary for a decision, truncated sequential analysis, sequential tests of single and composite hypotheses. (Not offered in 1953-54.)
- 295-96 *Reading and Research (3-3)* Weida
 Admission by permission of the instructor. Time to be arranged. Weida
- 299-300 *Thesis (3-3)*

SURGERY

- Brian Blades, A.B., M.D., *Professor of Surgery, Executive Officer*
 Paul Stirling Putzki, M.D., *Clinical Professor of Surgery*
 Arch Lockhart Riddick, B.S., M.D., *Clinical Professor of Surgery*
 John Hugh Lyons, M.D., M.S., *Clinical Professor of Surgery*
 John Gordon Lee, A.B., M.D., C.M., Med. Sc.D., *Adjunct Clinical Professor of Surgery*
 Sam Foster Seeley, B.S., B.M., M.D., *Adjunct Clinical Professor of Surgery*
 Russell Kuhner Hollingsworth, M.S., M.D., *Professorial Lecturer in Surgery*
 Herbert Hermann Schoenfeld, M.D., *Associate Clinical Professor of Surgery*
 Alec Horwitz, M.S., M.D., *Associate Clinical Professor of Surgery*
 William Stanley McCune, A.B., M.D., *Associate Clinical Professor of Surgery*
 Benjamin Franklin Dean, Jr., M.S., M.D., *Assistant Clinical Professor of Surgery*
 Carl Berg, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Calvin Trexler Klopp, A.B., M.D., *Assistant Clinical Professor of Surgery*
 Julius Salem Neviaser, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Jerome Blaine Harrell, M.D., *Assistant Clinical Professor of Surgery*
 Leonard Theodore Peterson, B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Walter Henry Gerwig, Jr., A.B., M.D., *Assistant Clinical Professor of Surgery*
 Vincent Michael Iovine, B.S., M.D., *Assistant Clinical Professor of Surgery*
 John Pletch Adams, B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Richard Knight Thompson, D.D.S., *Associate in Dental Surgery*
 William Ross Morris, M.D., *Associate in Surgery*
 Jacob Joseph Weinstein, B.S., Phar.G., M.D., *Associate in Surgery*
 William Carey Meloy, M.D., M.S. in Med., *Associate in Surgery*
 Edward Alexander Cafritz, M.D., *Associate in Surgery*
 Karl Hayden Wood, Phar.G., D.D.S., *Associate in Dental Surgery*
 Gordon Sparks Letterman, B.S., M.D., *Associate in Surgery*
 James Leo Kelley, A.B., M.D., *Instructor in Surgery*
 Robert George McCorkle, Jr., B.S., M.D., *Instructor in Surgery*
 Arnold Martin Salzberg, A.B., M.D., *Instructor in Surgery*

Crenshaw Douglas Briggs, B.S., M.D., *Clinical Instructor in Surgery*
 Joseph Francis Conlon, D.D.S., *Clinical Instructor in Dental Surgery*
 Duane Case Richtmeyer, A.B., M.D., *Clinical Instructor in Surgery*
 *Richard Lee Jackson, M.D., *Clinical Instructor in Surgery*
 Leon Gerber, M.D., *Clinical Instructor in Surgery*
 Thomas Bradley, A.B., M.D., *Clinical Instructor in Surgery*
 Ernest Alva Gould, B.S., M.D., *Clinical Instructor in Surgery*
 Austin Bertram Rohrbaugh, Jr., M.D., *Clinical Instructor in Orthopedic Surgery*
 Marvin Hayne Kendrick, A.B., M.D., *Clinical Instructor in Surgery*
 Brooks Gideon Brown, B.S., M.D., *Clinical Instructor in Surgery*
 Lois Irene Platt, A.B., M.D., *Clinical Instructor in Surgery (Cancer Cytology)*
 John Decator Hoyle, B.S., M.D., *Clinical Instructor in Surgery*
 Henry Leon Feffer, A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 Robert Roland Smith, B.S., M.D., *Clinical Instructor in Surgery*
 Howard Clemeth Pierpont, A.B., M.D., *Clinical Instructor in Surgery*
 Norman Harry Isaacson, A.B., M.D., *Clinical Instructor in Surgery*
 Charles Stanley White, Jr., B.S., M.D., *Clinical Instructor in Surgery*

101-2 *Surgical Anatomy*

Entire first-year class. Clinics illustrating relationship between gross anatomy and clinical surgery. University Hospital. One hour every two weeks.

280 *Introduction to Surgery*

One hour twice a week. Lectures and recitations covering general surgery. The Staff the field of

284 *Surgical Physiology*

A clinical and laboratory course with particular emphasis on applied Physiology. Two hours a week. The Staff on applied

373-74 *Clinical Clerkship I*

The student is assigned and required to work up thoroughly the cases for diagnosis and treatment. Gallinger Hospital. The Staff the

375-76 *Outpatient Surgical Clinic*

Surgical clinic. Gallinger Hospital. Forty hours. The Staff

377-78 *Orthopedics I*

Weekly orthopedic lecture, Gallinger Hospital; weekly seven and one-half hour ward rounds. Gallinger Hospital. The Staff

379-80 *Surgical Staff Conference I*

Tuesday at Gallinger Hospital.

* On national service leave.

- 383-84 *Surgical Clinic I* Blades
Demonstration of various surgical diseases to the entire third-year class. One hour a week.
- 473-74 *Clinical Clerkships II* The Staff
University Hospital, six weeks. Mt. Alto or Emergency Hospital, three weeks.
- 479-80 *Surgical Staff Conference II* The Staff
Wednesday at the University Hospital.
- 483-84 *Surgical Ward Rounds* Blades
Demonstration of various surgical diseases to fourth-year clerks. University Hospital. One hour a week.
- 491-92 *Surgical Pathology II* Newman
One hour conferences each week.
- 493-94 *Surgical Anatomy* Horwitz and Staff
Lectures for fourth-year clerks. University Hospital. One hour a week for twelve weeks.
- 497-98 *Surgical Clinic* Blades and Staff
Conferences for fourth-year clerks assigned to the University Hospital. Walter Reed Hospital. Two hours a week.

UROLOGY

Frederick A. Reuter, M.D., *Professor of Urology, Executive Officer*
 Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*
 Gilbert Ottenberg, A.M., M.D., *Associate in Urology*
 William Dabney Jarman, B.S., M.D., *Associate in Urology*
 Edward Egner Ferguson, M.D., *Associate in Urology*
 Leon Richard Culbertson, B.S., M.D., *Associate in Urology*
 Gordon Rhodes MacDonald, B.S., M.D., *Clinical Instructor in Urology*
 Herbert DeGrange Wolff, Jr., M.D., *Clinical Instructor in Urology*
 Frederick Turner Reuter, M.D., *Clinical Instructor in Urology*

395-96 *Clinics*

The Staff

Clinical teaching and demonstrations on the care of urological cases with special emphasis on the pre- and post-operative management. Operative clinics and clinical teaching. Gallinger Hospital.

491-92 *Urology*

Reuter and Staff

Lectures covering the entire field of urology including diagnosis, treatment, and morbid pathology. One hour a week.

495-96 *Clinics*

Reuter and Staff

Clinical demonstrations, teaching in the Outpatient Department, and urological X-ray conferences, with special attention given to diagnostic procedures. University Hospital. One part of each section three hours a week.

ZOOLOGY *

Ira Bowers Hansen, Ph.D., *Professor of Zoology, Executive Officer*
 Kenneth Casper Kates, Ph.D., *Professorial Lecturer in Zoology*
 Edith Elizabeth Mortensen, Ph.D., *Associate Professor of Zoology*
 _____, *Assistant Professor of Zoology*

Bachelor of Arts or Bachelor of Science (Columbia College—Field-of-Study).
 —Prerequisite: the Arts and Letters or the Science curriculum, respectively, in the Junior College, see pages 60-61, including Zoology 1-2. Required: the general requirements as stated on pages 75-80, and the grade "pass" on the Zoology major examination at the end of the senior year. The correlated knowledge upon which the student will be examined includes the following fields: (1) classification, structure, and ecological relations of animals, both invertebrate and vertebrate; (2) embryological development and life histories of important animal types; (3) general principles of physiology, heredity, and evolution; (4) the development of biological principles, hypotheses, and theories as revealed in the study of the history of zoology.

Master of Arts or Master of Science in the field of Zoology (Columbia College).—Prerequisite: the degree of Bachelor of Arts or Bachelor of Science, respectively, with a major in Zoology at this University, or the equivalent. Required: the general requirements as stated on pages 81-84.

FIRST GROUP

1-2 *Introduction to Zoology* (4-4) Mortensen, Hansen

An introduction to the study of the structure, functions, and relation of animals, and of the fundamental biological principles involved. Material fee, \$9 a term. Lecture (2 hours)—morning and evening sections; laboratory (4 hours)—morning, afternoon, and evening sections. (Also offered 1953 summer term.)

41-42 *Comparative Vertebrate Anatomy* (3-3)

Lectures on the organ systems of the vertebrates; laboratory dissections of types. Prerequisite: Zoology 2. Material fee, \$9 a term. Lecture (1 hour)—morning and evening sections; laboratory (4 hours)—morning and evening sections.

SECOND GROUP

101-2 *Invertebrate Zoology* (3-3) Mortensen

A systematic study of invertebrate forms, including the study of morphology, classifications, life histories, and phylogenetic relationships. Occasional field trips. Prerequisite: Zoology 1-2 or Biology 1-2. Material fee, \$6 a term. Lecture (1 hour); laboratory (4 hours). Afternoon.

105 *Entomology* (3) Munson

A study of the elementary morphology, physiology, and ecology of insects, with an introduction to the taxonomy of the more important

* See also the departments of Biology and Botany.

groups. Prerequisite: Zoology 1-2, or the equivalent. Material fee, \$6. Lecture (1 hour), laboratory (4 hours). 1954-55 and alternate years, morning.

138 Histology (3)

An introduction to the microscopical anatomy of normal tissues and organs. Prerequisite: Zoology 1-2. Material fee, \$9. Lecture (1 hour), laboratory (4 hours). 1953-54 and alternate years, afternoon. 1954-55 and alternate years, evening. (Also offered 1953 summer term.)

145 Introduction to Vertebrate Embryology (3)

Hansen

The origin and early development of the individual and the formation of organ systems. Emphasis is placed on the frog, chick, and pig, with reference to the human embryo. Prerequisite: Zoology 2, and 41 or 42. Material fee, \$9. Lecture (1 hour), laboratory (4 hours). 1953-54 and alternate years, evening. 1954-55 and alternate years, afternoon.

152 Protozoa (3)

Mortensen

An introduction to the protozoa: classification, life histories, and physiology, with special emphasis on free-living types. Prerequisite: Zoology 1. Material fee, \$6. Lecture (1 hour); laboratory (4 hours). 1953-54 and alternate years, evening.

156 Parasitology (3)

Kates

An introduction to the study of animal parasitology, with a survey of parasitic types from protozoa through arthropods. Prerequisite: Zoology 1-2 or the equivalent. Material fee, \$9. Evening.

162 Insect Physiology (3)

Munson

Lectures and laboratory work on the physiology of insects. Admission by permission of the instructor. Material fee, \$9. 1954-55 and alternate years, evening.

171-72 Special Problems (3-3)

The Staff

Written approval of the instructor is required. Material fee, \$9 a term. Time to be arranged.

199-200 Proseminar (3-3)

The Staff

A course designed to correlate and supplement the work of Zoology majors. Morning and evening sections.

THIRD GROUP

203 Seminar in Invertebrate Zoology (3)

Mortensen

A study of original publications on hormones of invertebrate animals. Evening.

214 Advanced Invertebrate Zoology (3)

Mortensen

Lectures and laboratory work on problems in invertebrate physiology. Prerequisite: Zoology 1 and 101-2 or the equivalent. Material fee, \$6. Lecture (2 hours); laboratory (2 hours). 1954-55 and alternate years, evening.

- 247-48 *Morphogenesis* (3-3) Hansen
Lectures and class reports on experimental morphology. Prerequisite:
Zoology 41-42, or the equivalent. 1954-55 and alternate years, even-
ing.
- 251-52 *Seminar in Vertebrate Zoology* (3-3) _____
Time to be arranged.
- 295-96 *Research* (arr.) The Staff
Investigation of special problems. Time and credits to be arranged.
(Also offered 1953 summer term—Zoology 295(3).)
- 299-300 *Thesis* (3-3) The Staff
Time to be arranged. (Also offered 1953 summer term—Zoology
299(3).)

STUDENT LIFE

STUDENT LIFE

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school; (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing, in the University Hospital for not more than one week during any twelve-month period. For a statement of the rules governing medical and hospital privileges, see Health Administration, page 191.

LIVING ACCOMMODATIONS

Women Students.—The Hattie M. Strong Residence Hall provides single rooms at \$35 a month and double rooms at \$30 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Girls under the age of twenty-one who are enrolled for twelve or more credit hours of academic work in the University and who are not living with their parents or relatives may live outside the dormitory only with the permission and approval of the Director of Activities for Women, upon receipt of written requests from parents. In no case will permission be granted for such girls to be domiciled outside the dormitory, except with persons approved by the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Dining facilities are available to all residents. Meals are served at the Student Union. Application forms for reservations may be obtained from the Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University for women students twenty-one years of age or older and for men students may be obtained at the offices of the Director of Activities for Women and the Director of Activities for Men, respectively. The reservation of rooms in private houses must be made by students.

RELIGIOUS LIFE

The University recognizes the contribution that religion can make to the education of its students by encouraging them to participate in denominational clubs of their own choice. National Catholic, Jewish, and Protestant bodies sponsor these religious organizations, which act as links between the University and the local churches. The Director of the University Chapel and the advisers to the various denominational organizations are available throughout the year for consultation on personal problems.

UNIVERSITY CHAPEL

The University Chapel is maintained as a non-sectarian expression of the faith of the University in the contribution that religion can make to the education of its students. Twenty-minute services are held Wednesday of each week at 12:10 P.M. Representative clergymen of Washington are guest speakers at these non-denominational services.

PLACEMENT OFFICE

The Placement Office, 2114 G Street NW., provides assistance to students and alumni seeking full- and part-time employment. This office maintains a registry of positions locally and nationally available and refers qualified applicants for consideration. Information is also available on Civil Service examinations.

VOCATIONAL COUNSELING

The University Testing Center is located at 2114 G Street NW. The Center offers educational and vocational testing and counseling service. This office maintains a file of occupational information and training opportunities.

STUDENT UNION

The Student Union, 2125 G Street NW., is the center for student life. From the cafeteria and snack bar on the first floor to the game room on the fourth floor, it is well planned to meet the students' need for meals, study, recreation, and activities. In addition to the recreation lounge and social lounge the Student Union provides office space for the Student Council and for the other major student organizations.

The Student Activities Office, also in the Student Union, has available information concerning the student organizations and campus events.

INTERNATIONAL HOUSE

The International House, 2116 G Street NW., is the social center for students from foreign countries. A series of teas, dances, and other

forms of entertainment, and the use of club rooms and lounge enable students to become acquainted and feel at home in the University.

The International Students' Society welcomes as members students from other lands as well as North American students.

The Adviser to Students from Foreign Countries, whose office is in International House, is available for advice and guidance.

STUDENT ACTIVITIES

DIRECTORS OF STUDENT ACTIVITIES

The University maintains the offices of the Director of Activities for Men and the Director of Activities for Women, for the guidance of students in all nonacademic phases of student life, such as, student activities, social life, and housing. The directors are available for individual counseling concerning personal adjustment to university life.

STUDENT GOVERNMENT

Student Council

The Student Council is responsible to the Director of Activities for Men and the Director of Activities for Women for the conduct of all student activities. Members of the Council are elected annually.

Committee on Student Life

The Committee on Student Life is the judicial branch of the student government. It is composed of not more than seven members of the faculty, appointed by the President of the University, and not more than six members of the student body, nominated by the Student Council and appointed by the President of the University. This committee has the power to review the acts of all student organizations, including the Student Council, and set aside acts that are contrary to established policy and regulations of the University or the Committee.

Approval of Student Organizations.—This committee is granted authority to approve or disapprove the establishment of any proposed organization on campus. No student club or society (except social fraternities, sororities, scholastic honor societies, religious or professional clubs or societies) organized as a branch or affiliate of a non-George Washington University organization will be recognized by the Committee on Student Life.

ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in The George Washington University who has a general average of not less than C (2.00) is eligible to participate in non-athletic student activities approved by the Committee on Student Life.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

The control and administration of all student activities are outlined in a separate bulletin.

STUDENT ORGANIZATIONS

HONOR SOCIETIES

Phi Beta Kappa.—A national honor society recognizing "outstanding intellectual capacity well employed" in the field of liberal arts and sciences. Senior and junior students who are candidates for the degree of Bachelor of Arts or Bachelor of Science in Columbian College (in exceptional cases, senior and junior students in other non-professional divisions of the University) and who have shown broad cultural interests, distinguished scholarly achievement, high character, general promise, and scholarly ideals may, to a number not exceeding 15 per cent of a class, be elected to membership by the Faculty members of the Alpha Chapter of the District of Columbia.

Sigma Xi.—A national scientific honor society, the purpose of which is to encourage original investigation in science pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

Alpha Kappa Delta.—A national sociology society.

Alpha Lambda Delta.—A national fraternity established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman women who attain a scholastic average of at least 3.50.

Alpha Pi Epsilon.—A home economics fraternity.

Arnold Air Society.—A national Air Force ROTC society.

Artus.—A national economic society.

Delphi.—An intersorority society.

Delta Sigma Rho.—A national forensic society.

Gate and Key.—An interfraternity society.

Iota Sigma Pi.—A national chemical society for women.

Mortar Board.—A national society for senior college women, stressing leadership, scholarship, and service.

Omicron Delta Kappa.—A national fraternity emphasizing leadership in extracurricular activities.

Order of the Coif.—A national legal society, the purpose of which is to foster a spirit of careful study and to mark in a fitting manner those

who have attained a high grade of scholarship. Members are elected each year from the highest 10 per cent of the graduating class of the Law School.

Phi Epsilon Phi.—A national botany fraternity.

Phi Eta Sigma.—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.50.

Pi Delta Epsilon.—A national collegiate journalism fraternity.

Pi Gamma Mu.—A national social-science society.

Psi Chi.—A national psychology fraternity.

Sigma Alpha Eta.—A national speech and hearing society.

Sigma Pi Sigma.—A national physics fraternity.

Sigma Tau.—A national engineering fraternity, the purpose of which is to recognize scholarship and professional attainment.

Smith-Reed-Russell Society.—A scholastic society in the School of Medicine. Students of the third and fourth years who maintain a scholastic average of 86 per cent are eligible for associate membership.

Tassels.—A sophomore society.

William Beaumont Medical Society.—A society founded with the object of encouraging and stimulating medical students in work of individual investigation.

PROFESSIONAL ORGANIZATIONS

Alpha Chi Sigma (chemistry), Alpha Epsilon Iota (medicine), Alpha Kappa Psi (commerce and economics), Alpha Zeta Omega (pharmacy), American Institute of Electrical Engineers (student chapter), American Institute of Radio Engineers (student chapter), American Pharmaceutical Association (student branch), American Society of Civil Engineers (student chapter), American Society of Mechanical Engineers (student chapter), Chi Upsilon (geology), Delta Phi Epsilon (foreign service), Delta Theta Phi (law), Future Teachers of America, Gamma Eta Gamma (law), Kappa Beta Pi (law), Kappa Psi (pharmaceutical), Mortar and Pestle (pharmacy), Nu Beta Epsilon (law), Nu Sigma Nu (medicine), Phi Alpha Delta (law), Phi Chi (medicine), Phi Delta Delta (law), Phi Delta Epsilon (medicine), Phi Delta Gamma (graduate), Phi Delta Kappa (education), Phi Delta Phi (law), Phi Pi Epsilon (foreign service), Pi Lambda Theta (education), Society for the Advancement of Management (student chapter), Theta Tau (engineering).

SOCIAL FRATERNITIES

Sigma Chi, Kappa Sigma, Kappa Alpha, Theta Delta Chi, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Phi Epsilon, Phi Alpha, Sigma Nu, Acacia, Tau Kappa Epsilon, Pi Kappa Alpha, Tau Epsilon Phi, Alpha Epsilon Pi, Delta Tau Delta.

SOCIAL SORORITIES

Pi Beta Phi, Chi Omega, Sigma Kappa, Alpha Delta Pi, Delta Zeta, Kappa Delta, Phi Sigma Sigma, Zeta Tau Alpha, Kappa Kappa Gamma, Delta Gamma, Kappa Alpha Theta.

DEPARTMENTAL CLUBS

Art Club; Case Club; Charles Clinton Swisher History Club; Dance Production Groups, I, II, III; El Club Español; Engineering Council; Enosinian Debating Society; Home Economics Club; Howard E. Kane—A.F.A. King Obstetrical Society; Le Cercle Français; Lester F. Ward Sociological Society; Oquassa; Physical Education Majors Club; Psychology Club; Schoenfeld Verein; Student Bar Association.

RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Canterbury Club, Christian Science Organization, Lutheran Student Association, Newman Club, Religious Council, Wesley Club, Westminster Foundation.

MUSICAL ORGANIZATION

The George Washington University Glee Club.

STUDENT PUBLICATIONS

Amicus Curiae (Law School publication), *The Cherry Tree* (the annual), *The University Hatchet* (weekly newspaper), *The George Washington Law Review*, *Mecheleciv* (engineers' publication), *The Percolator* (pharmaceutical publication).

OTHER ACTIVITIES

Alpha Phi Omega—National Service Fraternity, Alpha Theta Nu (scholarship winners), Big Sisters, Cheerleaders, Colonial Boosters, Hellenic Society, Inter-fraternity Council, Inter-fraternity Pledge Council, International Relations Club, International Students' Society, Inter-sorority Athletic Board, Intramural Council, Junior Panhellenic Association, Martha Washington Club, Masonic Club, Sailing Association, Senior Panhellenic Association, Strong Hall Council, Student Council, The George Washington University Dramatic Activities, Women's Coordinating Board, Women's Recreation Association.

There is a complete program of intramural sports for both men and women.

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THE UNIVERSITY RECORD

SUMMER TERM 1952

FALL AND SPRING TERMS 1952-53

DEGREES CONFERRED

JUNIOR COLLEGE

ASSOCIATE IN ARTS

NOVEMBER 11, 1952

Plato Anastasiades	Ohio	Alan Goodsaid	Md.
Jean Anderson	Conn.	Stanley Joseph Goray	N.Y.
Lula Appel	D.C.	Norman Gamblin Gray	Va.
Geraldine Applestein	N.Y.	Victor Edward Grob	D.C.
Margery Babione	Va.	Everett Leo Haas	D.C.
Jean Ruth Baehus	D.C.	Robert Lee Hagerdorn	Md.
Don Mervin Baldwin	Mich.	Ada Louise Hains	Va.
Bernard Alvin Band	D.C.	Joan Helen Harnett	Va.
Lloyd Morris Barber	Ala.	Allen Hugh Harrison, Jr.	Va.
Florence Bartkowski	Ohio	Phyllis Jacquelin Harte	D.C.
James Henry Bazwick, Jr.	D.C.	Townsend Heard	Va.
Jack Edward Baumgartner	Va.	Lyn Henderson	D.C.
Charles Vernon Belt	Md.	Vilma Herrmann	D.C.
Charles Redmon Berry	Texas	Charles Edwin Hesaltine, Jr.	Va.
Mitchell Blankstein	D.C.	John Honeycutt Hinrichs, Jr.	D.C.
(With distinction)		Philip Scott Horne	Va.
Roderick Hans Boes	D.C.	David Edward Icenhower	D.C.
Lorette Boissonneault	D.C.	Charles Thomas Jeffrey	D.C.
(With distinction)		Joseph Branscomb Jernigan	D.C.
Robert Eugene Boley	D.C.	Ethel Irma Johnson	Va.
Samuel Vladimir Boor	Md.	James Walter Johnson	Md.
Harry Marcus Bandler	D.C.	Robert Edward Johnson	Iowa
Mary Martha Branton	Mo.	Elizabeth Caroline Johnstone	D.C.
Verlyn Elizabeth Brown	Va.	Robert Theron Jones	Md.
Paul Anthony Cajigas	D.C.	Danforth Joslyn	D.C.
Newton Eugene Carnahan	Mo.	Laura Kathleen Kao	N.Y.
Dorothy Lee Chow	D.C.	Jay E. Kaplan	N.Y.
George Ordway Clark	Va.	George Andrew Karelias	D.C.
Frederic Dudley Clifton	D.C.	Jerold Jacob Katz	D.C.
Albert Morgan Cloud, Jr.	Iowa	Stanley Martin Kirson	D.C.
(With distinction)		Warner Arthur Klemm	Utah
Jack Wayne Collier	Va.	David Kaywin Knox	Va.
Barbara Connolly	D.C.	George Anest Koutras	D.C.
Frank Edward Continetti	D.C.	Gloria Broom Krakes	D.C.
Maryna Evelyn Cook	Va.	Carl Aaron Kramer	Md.
May M. Davenport	Va.	Frances Elizabeth Landon	Va.
Calvin Woodward Day	D.C.	Gertrude Cecelia Laprade	D.C.
William Leon Delaney, Jr.	Conn.	Milton Samuel Lemons	Md.
(With distinction)		Thomas Clinton Lilley	Pa.
Donald Wade Detwiler	D.C.	Wilhelmina Tontike Loomis	Wis.
Louis Howard Diamond	D.C.	Harold Frederic Luskin	D.C.
Mary Berthe Dion	Canada	John Albert Lytle	Va.
Guy Houston Dorsey	N.J.	Robert Carpenter Macon	D.C.
Shirwood Albert Drake II	Va.	Dumari Peter Mullins	D.C.
George Hayden Dudley	D.C.	Helen Chrysanthia Maniatis	Md.
Patricia Clare Eakelen	Pa.	Joseph Michael Marchesano	N.J.
George Seymour Feinstein	D.C.	Louis Basil Marchi	D.C.
Edward Herbert Faly	D.C.	Matthew David Margoles	N.Y.
Francis Eugene Ferrero	N.J.	Mary Lou Martin	Va.
Ruth Isabel Fivinger	Va.	Lawrence Daniel McCarthy	Va.
Robert Carl Foldenauer	Md.	Donald Anthony McDonnell	D.C.
Elizabeth Anne Freiburghouse	D.C.	Ralph Hue Matusik	Va.
Fred F. Fels	Md.	Elizabeth Matshell	Va.
James Frederick Gallagher	N.Y.	Chester Martin Moreland	D.C.
John Glenwood Gibbs, Jr.	N.Y.	Robert Graham Moss	Mass.
William Peter Giglio	Md.	Alura Anne Mumford	Va.
James Edward Glover	Md.	Cecilia Lee Murdock	D.C.
Sylvan Lippman Goldin	Va.	Harold Myers	Pa.
	D.C.	Betty Rae Nesbitt	Va.
		(With distinction)	

Dan Novak
Hazelven Orleans
Anna Dolores Osso
Anne Ruffin Page
John Allen Parson, Jr.
Donald Joslin Pearce
(With distinction)
Helen Mae Perschick
Dorothy Ellen Peters
Josephine Anne Petruska
Leland Monroe Pyle
Eugene Ann Quackenbush
James Mariano Ramos
John Cornelius Ready, Jr.
Rose Bertha Reine
Leland Jean Robertson
Anne Louise Rodgers
John Edmund Ross
George Ivan Rozovsky
Robert Sanford Rozman
Joanne Leona Sandler
Susan Shapiro Schlosser
Charles Marvin Schonberger
Alfred Joseph Schweser
Anthony Harry Rosa Santa
(With distinction)
Ellen Cassen Sorenson
Brian Zedek Smal
Lana Cohen Slesinger
Robert Miller Sherman

Pa.
D.C.
Pa.
D.C.
Va.
D.C.
D.C.
D.C.
D.C.
N.J.
Va.
Va.
D.C.
Md.
Pa.
D.C.
D.C.
Va.
D.C.
Md.
N.D.
D.C.
Va.
N.C.
D.C.
D.C.
Texas

Schuyler Waddington Shewmaker
Thomas Alva Edison Shoemaker, Jr.
Muelley Jay Sliote
Maria Wilhelmina Slotemaker de Bruine
Union of South
Marvin Franklin Smith
Thomas Lawrence Snow
Joan Irene Spaeth
Ray Spencer
Myron Starr
Edward Morris Statland
Paula Marsh Stein
Freeman Graham Stephenson
John M. Lutz Stokes
Paul Byron Stroup
Edna and Maurine Swaggard
Robert Lee Tanager
Morton Jerome Tasker
Eva Kelle Telly
Billy Eugene Turner
Rudolph Warren Wallis
Raymond Ward Walter, Jr.
Foster A. Bartlett Warder, Jr.
Mavis Waxman
Clark Gibbons Webster
Lex Kenneth Webster
Charles Adams White II
Frances Louise White
Barbara Colleen Wolf
Barton Harold Wolfe

FEBRUARY 23, 1953

Phyllis Johnson Allen
Rene Charles Almont
Merton A. Anderson
Alexander Nicholas Asperakis
Craig Stephen Atkins, Jr.
Bessie Bachman
John Henry Beverard, Jr.
Lee William Bryant
Lyle William Blakely
Lorne Lynn Brouck
Richard Lee Burtonfield
Philip Henry Brooks
Robert Seymour Bryant, Jr.
John James Campbell
Anne Catherine Caswell
Leland James Clark
Leland Clayton Cox II
Andrew Thomas Cule
Florence Marie Coleman
John Marshall Condon
(With distinction)
Damon Nicholas Corbin
Stanley George Darchowski
Robert Lloyd Darrow
Sara Belle Dierham
Oswald James Donnelly
William Charles Downing
Mace Bell Evans
Florence Reynolds Erlich
Florence Anne Fayer
Carl William Fisher
June Anne Flory
Anastasia Gosselle
Lola Patricia Gernova
David M. Colver Gilbert
Flythe Asher Gray
Robert Hanson Green
Phyllis Sarah Greenberg
Elizabeth Jane Griffith
Herbert Samuel Gross

Va.
N.Y.
D.C.
Md.
Md.
Va.
Pa.
D.C.
D.C.
Pa.
Kans.
D.C.
Md.
N.Y.
Va.
S.C.
D.C.
Md.
N.Y.
Ky.
D.C.
D.C.
Va.
D.C.
Ohio
N.J.
Md.
D.C.
Md.
Ky.
Utah
D.C.
D.C.
D.C.

Doris Sanford Hadley
Bonnie Ruth Hall
Bernice Mae Hamlin
Benjamin Thompson Harris
Betty Jane Hill
Betty Ruth Hill
Joseph H. Hines
Richard Louis Hines
Ruth Elaine Hubbard
Kenneth Judd
Robert Alexander Kaufman
Morton Louis Kane
Murielle Avastie Lantz
John Lee
James William Linkart
Lawrence Jonathan Loewenstein II
Raymond Victor Lucas
(With distinction)
Arthur Marshall
John Russell Marshall
Mae Russell Marshall
Robert Thomas McCaughen, Jr.
Nora Henson Kathleen McKinney
Suzanne Marie McKinney
Barbara Lee Miller
John Alexander Miller
Edward Monette Miller
Gladys Thelma Monnette
Rita Adele Olson
Tina Ruth Olson Vahlsbo
Carlisle Louise Parker
Jillian Lewis Scott
Oscar Wanda Scott
Berrie Lee Shalby
(With distinction)
Ranald George Smith
Tom Albert Sherman
Laurie Seymour
Howard Anne Small
Stephen James Smolowsky

Donald David Smith	Md	Virginia Caroline Warren	Pa.
Joan Marlowe Smith	Md	(With distinction)	
Wayne Leroy Smith	D.C.	Robert Arthur Weib	Md
Heleen Spool	Pa	Tanya Elaine Weisberg	D.C.
James McNeill Strancill, Jr.	D.C.	George Litzman Wente	Md.
Raunwald Charles Surgen	Md	Donald Mark Wiatosky	Mass
Janet Sabul Tappan	Va	Louis Edwin Windecker	N.J.
William Asher Taylor	Md	Joanne Patricia Winslow	Va
William David Thaler	Pa	Paul Wohl	N.Y.
Antony Frances Thomas	D.C.	Elizabeth Ann Yager	Ky
Rose Eleanor Tietman	Md.	Charles Edward Young	Va
Billy McGuire Vick	Va.	Maria Zeta Zadekakis	D.C.

MAY 27, 1953

Joseph Henry Abel, Jr.	D.C.	John George Fletcher	D.C.
Albert Frederick Abraham	Va	(With distinction)	
Finis Ellen Adams	Va.	William Stone Fletcher	Va.
Thomas Alexander	Va	Leanne Anne Flory	Mass.
William Gerson Applestein	D.C.	Barbara Anne Fox	Va.
Gertrude Ramona Ashour	Md	Betty Lee Fourn	D.C.
James Dewey Awtry, Jr.	Fla.	Stuart Earl Frank	D.C.
Gail Lear Bartlett	D.C.	Gary Fullerton	Va
Robert Ben.	D.C.	Glenn Grace Gannister	Ill.
James Herbert Bell	Va	Yancy Holmes Ganner	Md.
Caroline Schmitt Berk	Md	Herbert George Greger	Va
(With distinction)		Fluencer Katherine Gibbons	Conn.
Esther Marie Bertero	D.C.	George Milton Golin, Jr.	Md.
Benjamin Ann Buckrell	Idaho	Phyllis Gubomb	D.C.
Patricia Ann Blackwell	D.C.	Phillip Lee Green	Va
Beverly Lavon Blades	D.C.	Gary Edward Greene	Md.
Howard Leslie Blush	D.C.	Donald Allen Haisey	Va
Carl Theodore Bolobus	Pa.	Ruby Evelyn Hare	N.C.
(With distinction)		Jayne Frances Harper	D.C.
Arthur Bon Jan	Pa	Allen Edward Harrison	D.C.
Gerard Eric Bosvert	D.C.	John Michael Heller	Md.
Henry Don Bold	Ill.	Donald Raymond Huffeld	D.C.
Henry Jane Boonring	Pa.	(With distinction)	
Ben Locke Brittingham	Mich.	John Tyler Hamerbe	Calif.
Christopher Kimesley Brown	Ky	Michael Anne Haxford	Va
Thomas Marion Brown	Va	Mary Alida Holman	Md.
John Maurice Bell	Va	John Frank Holup, Jr.	Pa
Patricia Michele Burke	Md	Nancy Hepburn	Md.
Lisa Alonzo Caboon	Va	William Paul Hornsby	Ala.
Rosemary Janet Carusella	D.C.	Lay William Howard	D.C.
John F. Caspenter	Md	Dennis Herbert George Howe	Md.
Gerold Zander Carroll	D.C.	James Everett Howie	Mass.
Charles Morris Chatlin	Va	Medwin James Isseninger	D.C.
Robert Henry Clark	D.C.	Donald Bernard Iverson	S.D.
Henry Arker Cook	Iowa	Edward Paul Jennings, Jr.	D.C.
Nancy Stuart Coopchik	Md	Lucia Ann Johnson	D.C.
Frederick Fletcher Cowan, Jr.	D.C.	Delmar Kathryn, Jr.	Va
Mary Jane Catherine Cunningham	N.Y.	Richard Miles Kaufman	Md.
Dorothy Alvous Jendly	D.C.	Robert Stephen Keilmer	Md.
Albert Lincoln D. Puro	Va	Harold William Kennedy	Md.
Anna Martin Drake	Md	Talbot Virginia Anne King	Md.
Paul Lee DuBous	D.C.	Bonnest Joseph Kirin	D.C.
Cecil Patricia Dunn	Md	Louise Mae Kapsacka	Ohio
Frances Wright Dunn	R.I.	Stephen Joseph Kuebeck	Pa.
Nancy F. Eason Dwyer	D.C.	Gust George Kowstons	D.C.
(With distinction)	Va	Joseph Henry Kallback	D.C.
Margaret Wagner Emerson	D.C.	William Ann Lattimore	Va
(With distinction)		George Webster Latimer, Jr.	Md.
Richard Harris Eney	Va	(With distinction)	
Lee Eyster		Edith Emma Lander	D.C.
Beatrice Evans	Va.	(With distinction)	
Robert Hamilton Farmer	D.C.	Joan Lee	Va.
Josephine Beek Fankner	Mass.	Leona Emmy Felskowitz	Va
Ann Mosamer Fenton	Va	Steven Lynette Levy	Va.
James Albert Fink, Jr.	D.C.	(With distinction)	
	Va	George Liss	D.C.
		Arthur P. Longstreet	N.J.
		Saul Myron Luchs	N.J.

Charles Theodore Lynch	Md.	William Augustine Russell, Jr.	Va.
Robert Malison	D.C.	Paulette Marie Salto	D.C.
Norman Randolph Mason, Jr.	Va.	Chester Page Samson	Conn.
Shirley Ann Massie	Va.	Joe Taitano San Agustin	N.Y.
Lala Wanda Mathers	Va.	Elizabeth Florence Sanphy	N.J.
Grace Elaine Maupin	D.C.	George Edward Saxon	N.Y.
David Wallace Mayo	Wash.	Deena Ruth Schorr	N.Y.
Marvin Bruce McDonald	Ohio	(With distinction)	N.Y.
(With distinction)		Carol Hermine Schreiber	N.Y.
James Arthur McGuire	Va.	John Scott Schaffer	N.Y.
Marion McKechnie	D.C.	Nathan Elizer Shapiro	D.C.
Henry Earl McLane, Jr.	Va.	(With distinction)	Calif.
Barbara Ann McLeod	Va.	Charlotte Rosslyn Sherman	Va.
James Ralph McNelis	W. Va.	June Harriett Shields	Va.
Robert Willy Meier	D.C.	Lorita Gene Shields	D.C.
Stewart Walter Mooney	Md.	Karl Waldo Shipman	Va.
Patricia Anne Moore	D.C.	Andrey Cornelia Smith	Md.
Verone Josephine Moreno	D.C.	Claudia Elizabeth Smith	Ohio
Sylvia Aiko Nashiwa	Hawaii	Carole Sprenger	D.C.
James Robert Newton	Va.	Florence Virgene Stanfield	D.C.
Emma Lillian Nikl	D.C.	Howard William Stenger	D.C.
Garv Jack Nimetz	D.C.	Agatha Strates	D.C.
John David Oberholtzer	D.C.	LaRue Thomson Strieby	D.C.
(With distinction)		Robert Owen Swenarton	D.C.
Edward Eugene Oliver	Va.	(With distinction)	D.C.
Hardin Ellang Olson	Va.	William McKee Tappe	Va.
Beale Hibbs Ong	Md.	Grace Augusta Thada	Va.
(With distinction)		Luther Minter Thomas, Jr.	Ga.
Anne Paffenbarger	Md.	William Robert Throckmorton, Sr.	Md.
Louis John Papas	Texas	Fred Brownell Tomlinson	N.J.
(With distinction)		Woodrow Emory Townsend	Calif.
William Charles Pemberton	Md.	Clifford William Tremblay	Mass.
James Henry Pfluggant	D.C.	Omar Alvin Tunks	Va.
Joseph Vincent Pistone	D.C.	(With distinction)	Fla.
Benjamin William Posin	D.C.	Dorothy Louise Vail	Wn.
Martha Claudia Preston	D.C.	Andy Howard Wallen	D.C.
Carmine William Racca	R.I.	Deirdre Drew Walt	N.J.
Margaret Murchison Reed	D.C.	Louis Frederick Warrick, Jr.	Va.
(With distinction)		Lynn Marion Watwood, Jr.	Ill.
Ann Madison Reid	D.C.	Leonard Irving Weinglass	Va.
(With distinction)		(With distinction)	Ill.
Malcolm Francis Reintzel	Md.	Robert Milton White	Va.
Henry Augustus Renz III	Va.	Suzanne White	Mass.
Donald Francis Ring	N.Y.	(With distinction)	Ohio
Calvin Donald Rotchie	Va.	Ransom Alban Whittle	Va.
Melvin Chester Roane	Md.	Nelson Grady Wight	D.C.
Howard Richard Roberts	N.Y.	John William Wydro	Va.
Richard Campbell Roberts	Utah	Robert Lamar York	
Marvin Bruce Rosenblatt	D.C.	Kharmin Hudson Young	
Arnold James Rudin	Va.		

COLUMBIAN COLLEGE

BACHELOR OF ARTS

NOVEMBER 11, 1952

Eather Marina Abellón	Cuba	Shelton Phelps Dawson	Utah
Martha Luisa Abellón	Cuba	Miguel de Echegaray	D.C.
A.B. 1951, The George Washington		John Andrew Donahue	N.Y.
University		Melvin Douglas Epstein	N.Y.
Joan Ruth Bachhus	D.C.	John Frederick Foltz	Md.
Raymond Lowell Bancroft	D.C.	Robert Nelson Ford	Va.
Max Gishner Bernhardt	Md.	Ovid Thomas Forman, Jr.	D.C.
Adelaide Blume	D.C.	Arthur Gallant	Honduras
Clinton Charles Bopat	Md.	Elsa Louise George	D.C.
Elizabeth Helen Branch	Conn.	Constantine John Gillespie	Md.
Patricia Louise Brown	La.	Forest Gordon	Mass.
George Edward Burks	Md.	William Joseph Guthrie, Jr.	S.D.
Louis Ciarrocca, Jr.	N.J.	Gaylord Jerome Hofstetter	D.C.
Carolyn Olson Dale	Md.	Heibert Ogden Horn	Md.
Vivian Elizabeth Davis	Mich.	Edwin Recher Itynre	

Gordon Thomas Kellegan
George Albert Leavitt, Jr.
Sue Darby Maguire
Emma Rose Maravalli
Mildred Maxine Marshall
Lawrence Stephen Martin
Helene Michelle Metzger
(With distinction)
John Nesbitt
Frances Taylor Norrington
Lola Pennyman

N.Y.	Margaret Agnew Rogers	D.C.
N.Y.	Michael Beatty Rowan	Va.
D.C.	Norman Schwartz	N.J.
Pa.	Jeannette Stathopoulos	D.C.
Fla.	Anne Rates Synan	D.C.
Va.	Nancy Thomas	D.C.
Pa.	Edmund Kearny Vertner, Jr.	Va.
Md.	Michael James Vespole	N.Y.
D.C.	Kathleen Ann Walworth	D.C.
Mass.	Louise Mae Wentz	Va.
	Aram Zakarian	D.C.

FEBRUARY 23, 1953

Charles Paskel Beazley
Ethel Blitzstein
Lempira Eusebio Bonilla
Robert Arnold Brook
George Calomiris
John Lester Chaney, Jr.
Carl Charlick
Dianne Louise Chatelan
Malcolm Cameron Clark
Earl Wayne Coppersmith
Richard Nicholas Creswell
Eleanor Edlow Cutler
Miriam Engel
Betty Jean Fouat
Lee Saunders Gerow
(Special honors in Journalism)
Natalie Giusti
Gertrude Marion Haugen
(With distinction)
Marjlyn Holzman
Margaret Hulsfish
Matthew Phillip Hyland III
Everett Carl Johnson
Sidney Kasner
Robert Gray Kassebaum
Patricia Keenan
Mary Elizabeth LeMay
Dore Martin

Va.	Barbara Ann McCall	Ky.
D.C.	Barbara Joy Nimmon	D.C.
Honduras	Diana Margarita Oreamuno	Costa Rica
N.Y.	Gene Francis Ostrom	D.C.
D.C.	Josephine Anne Petruska	Ohio
D.C.	Geraldine Fogel Pilzer	D.C.
N.Y.	(With distinction)	
Va.	Ruth Elizabeth Quinlan	Mass.
D.C.	Maxine Roth	D.C.
Calif.	Serapio Sendejo	Texas
D.C.	Elizabeth Rita Shumway	Mass.
D.C.	Ray Spencer	Va.
N.J.	Anne Taeyes	D.C.
D.C.	George Geoffrey Tannysen	D.C.
D.C.	(With distinction)	
Mass.	Robert Cash Tibbitts	Mo.
Minn.	John George Tiedemann	D.C.
	Robert James Tolliver	S.D.
	(With distinction)	
D.C.	Elena Consuelo Torceda	D.C.
Va.	Mary Elizabeth Triplett	D.C.
Calif.	Helene Louise Tsamiris	D.C.
Va.	Semah Aydemir Ustun	Turkey
N.Y.	Elizabeth Rouse Warriner	D.C.
Va.	(With distinction)	
Fla.	Ruth Yalom	D.C.
N.Y.	John Zolyak	Pa.
Md.		

MAY 27, 1953

Nancy Abbott
Harold Bell Alexander
George Harold Anderson, Jr.
Viola Antonette Andolfatto
John Joseph Appel, Jr.
John Alan Aynes
Ferdinand Lippitt Babcock
James Ruth Babigan
Thomas William Beale, Jr.
Eugene Albert Birnbaum
Joan Helen Blanken
Anna Bobb
Jennie Clara Boehlert
Isabel Spotswood Bouldin
(With distinction)
Oleta Brame
(With distinction)
Eugene Brandenburger
(With distinction)
Father Lerner Brenner
(With distinction—Special honors in Speech)
Reginald George Brosseau
LL.B. 1931, Northeastern University
Sally Ann Bruton
George Walton Buckmaster, Jr.
(Special honors in Journalism)
Ruth Anne Tomack Burns
Ann Deeley Callander

Md.	Claudia Beechum Chapline	Va.
Md.	(Special honors in Art)	
Ariz.	George LeRoy Cheesman	Md.
Md.	Charles Frampton Chowenhill	N.Y.
Md.	Martha Eljean Cook	Va.
Va.	Susan Ann Soulttrap	D.C.
Md.	Terrell Harvey Crank	Va.
D.C.	(With distinction)	
Ky.	Howard Donald Cresswell	D.C.
Md.	Dwaine Clendening Crommelin	Va.
D.C.	Katherine Norman Davis	Md.
D.C.	(Special honors in Art)	
N.Y.	Fred Franklin Dendler	Pa.
D.C.	Beverly Bailey Devo	Va.
	Thomas Wilson Dixon	Md.
Fla.	LL.B. 1940, The George Washington University	
Va.	Nicholas George Dounis	D.C.
Md.	Mary Dow	Mass.
	William Norman Early	Calif.
	(With distinction)	
Vt.	Harold Leonard Emerson	Va.
Va.	Louis Manuel Esparolini	D.C.
Pa.	Albert William Febrey	Va.
Va.	Phyllis Rose Fenster	D.C.
	(With distinction)	
Md.	Norman Bernard Ferris	Texas
	John Phillip Floyd	Va.

Diane Franks	D.C.	Nancy Ann McCoach	D.C.
Laurie Anne Gallagher	D.C.	Anne Cecile McConnis	D.C.
Lyann Darcy George	Va	Frances Beckett McNally	Va
Shirley Marie Gillette	D.C.	Marilyn Menikoff	D.C.
Lillian Rebecca Gilroy	Ala	James Forbes Merrow	Ala
Gretchen Goodwin	Va	(With distinction)	
Barbara Joan Goulett	Va	Carolyn Warren Messer	Va
Philip Arthur Grogan	D.C.	John Alexander Minter	D.C.
(Special honors in English)		Mary Elizabeth Minton	D.C.
Harold Arnold Green	Md	Albert Andrew Mivareck	D.C.
Donna Jeanne Greenley	N.H.	Condi Mustock	D.C.
James Arthur Grimm	Va	Lawrence Marcelles Murphy	Va
Russell Carl Grunsten	Fla	Raymond Augustus Murphy	Va
Dana Marie Hadas	D.C.	Margaret Anne Nasmith	Va
(With distinction)		Frances Adele Osburn	Va
Louis Abate Haley	Va	Lois Scherman Nussbaum	Ala
Marvleen Patricia Harahan	D.C.	Robert Eugene O'Hare	Ala
Frederick Gardiner Harmon	D.C.	James David O'Neil	Ala
Hubert Harvey	N.Y.	Donald Eugene Oppert	D.C.
Aynne George Heon	D.C.	(With distinction)	
Howard Herschel Hiatt	Va	Lucille Jane Overden	D.C.
(With distinction)		Ruth Ann Parker	Va
Henry Schatzel Huthook	Md	Vivian Charlotte Pear	Va
Richard Alvin Hussenberg	Va	(With distinction)	
Helen Louise Hollis	D.C.	Robert George Pelkin	D.C.
Margaret Anne Horning	Md	Richard Livingston Pentecost	Va
Catal Jean Hovslev	Oreg	Roger Carson Price	Va
Grace Blanchard Hough	D.C.	Roy George Richmond	Va
Berlyn Marie Hughes	D.C.	(With distinction)	
Shirley Rhodes Hutmire	Md	John Raymond Roberts	Va
Robert Howard Johansen	Calif.	Anne Carter Russell	Va
Elizabeth Caroline Johnstone	D.C.	(With distinction—Special honors in English)	
Dean Barrett Judd	Md	John Melville Sanderlin, Jr.	N.Y.
George Andrew Karelhas	D.C.	Carlus Samsen Teran	N.Y.
Margaret Adele Kearney	Pa.	Howell Jay Saul	N.Y.
Mary Ellen Keas	Iowa	Jeanne Ruth Schiff	N.Y.
(Special honors in Journalism)		Mary Elizabeth Schooley	N.Y.
Rhodes Marcia Keyser	Va	Lois Sandra Seidman	D.C.
Charles Edgar Kilday	Calif.	Sandra Ruth Shapiro	D.C.
Fve Kinsle	D.C.	Joseph Mapes Sizoo	Va
Elvira Frances King	N.Y.	Clark Spivey	Va
Wesley Arthur Klemm	Utah	Frank M. Nandev Stedman, Jr.	Ala
Donalda Jane Knoch	D.C.	James Logan Smith	Ala
(Special honors in Religion)		Virginia Anne Swanson	D.C.
Sally Charles Koozisto	Md	Joan Swanson Swarthout	N.Y.
Donalda Anne Kraemer	Md	Albert Edward Teshoff	N.Y.
Anne Chadenick Larrick	D.C.	Theresa Marie Takacs	N.Y.
Linda Lee Law	D.C.	William David Thaler	Ala
William Edmund Lind	D.C.	John Louis Thomas, Jr.	
Claron Oliver Lindseth	N.D.	Elizabeth Ethel Tusk	
Rose Andrea Lior	D.C.	Daniel Gerald Udelson	
Linda Jane Loshler	D.C.	(With distinction—Special honors in Mathematics)	
(With distinction—Special honors in Speech)		Reyna Lander Weid	N.Y.
Arthur London	Md	Jay Kenneth Weisner	N.Y.
Gus Walter Lovell	Md	Roberta Rae Welch	N.Y.
Gerald Franklin Lowe	D.C.	Jeanette Kelly Williams	D.C.
Lureli Elaine Landry	Fla	Martin Sue Wilson	Ala
(Special honors in Journalism)		Michael King Wisdom	D.C.
Lloyd Edward Lyons	D.C.	Margaret Rivers Wood	D.C.
Andrew Thomas Alexander MacDonald	Va	(Special honors in History)	
(With distinction—Special honors in English)		John Louis Yarus	
Charles Austin Marlow	Calif	Mac I. Yoretin Zabitsky	
Jimmy Mason	D.C.		

BACHELOR OF SCIENCE

NOVEMBER 11, 1952

Perry Curvellas
Donald William Datlow
Rachel Croft Miller

D.C. George Mario Padilla
D.C. Jacob Milton Sacks
Pa. Richard Overton Spencer

FEBRUARY 23, 1953

Malcolm Ernest Berrett
 Frances Anna Bullock
 Chester Anthony Clark
 Chester Anthony Matthes

Md.	William Harrison Schultz	Pa.
D.C.	Henry Snowden Voth	Md.
Va.	(With distinction)	
D.C.	Alan Rector Woolf	D.C.
Md.		

MAY 27, 1953

Don Merwin Baldwin
 Neil Lafayette Bernick
 Edward Basil Brattin
 Nicholas Michael Cambosos
 Gus Nelson Cederstrand
 Victor Robbins Creveling, Jr.
 Jerome Lester
 David Robert Evans
 Wilbert Donaldson Garrett
 Jack Mark Goldstein
 Herman Helberg Hobbs
 Thelma Elizabeth Huns
 Gloria Jean Kave
 Joan Mae MacEwen
 Marian Mueller
 Valerie Joan Osima
 Leonard Daniel Pasamanick
 Sam Mark Raymond
 Robert Robert Robinson
 Elizabeth Margery Ryder

Mich.	Leon Joseph Schkolnick	D.C.
D.C.	(With distinction—Special honors in Physics)	
Md.	Donald Wayne Seegerist	Va.
D.C.	Joel Nelson	D.C.
D.C.	(With distinction)	
N.Y.	George Fleming Seppack	D.C.
D.C.	William Stanton Shipley	D.C.
D.C.	Robert Lee Spiegler	N.Y.
D.C.	Helen Louise Stein	D.C.
Va.	Howard Neil Stewart	Va.
Pa.	Edward Morris Steward	D.C.
D.C.	Judith Covington Thompson	N.C.
Md.	John Francis Tighe	Md.
N.C.	George Vartkes Vahouny	Va.
Md.	Carl Weber Werntz	D.C.
N.Y.	(With distinction—Special honors in Physics)	
D.C.	Roland Charles Ziehl	Wis.
W.Va.		
D.C.		

MASTER OF ARTS

NOVEMBER 11, 1952

Mary Childs Black
 A.B. 1941, University of North Carolina
 Lois Green Bowen
 A.B. 1945, American University
 Howard Kenneth Carlson
 A.B. 1949, The George Washington University
 Paul Cherniack
 A.B. 1947, University of Michigan
 Robert Louis Gasser
 A.B. 1948, University of Denver
 Thomas Ailer Goldstein
 A.B. 1949, Harvard University

Va.	Walter Waldruff Lagerquist	Mich.
	B.S. 1948, United States Merchant Marine Academy	
D.C.	A.B. 1948, The George Washington University	
Md.	Chaytor Dice Mason	N.Y.
	A.B. 1949, The George Washington University	
Va.	William Eugene Montague	Ky.
	A.B. 1950, The George Washington University	
Colo.	June Bertram Roberts	Pa.
	A.B. 1954, Pennsylvania State College	
D.C.	Charles Brent Weasmer	D.C.
	A.B. 1951, The George Washington University	

FEBRUARY 23, 1953

Milton Epstein
 A.B. 1948, New York University
 Mrs. Elizabeth Evans
 A.B. 1951, Mary Baldwin College
 Margaret Nadine Paulavson
 A.B. 1948, Pomona College
 B.S. 1950, University of California
 George Edward Fry
 A.B. 1951, The George Washington University
 Robert Victor Jerome Gross
 A.B. 1949, University of Tampa
 Victor Anthony Mink
 A.B. 1949, Brooklyn College

D.C.	Vincent William McGee	Pa.
	A.B. 1949, The George Washington University	
D.C.	Ronald Monroe, Michael	D.C.
Calif.	B.S. 1952, Bates College	
	Samuel Pizer	Md.
	A.B. 1944, The George Washington University	
N.I.	Benjamin Anthony Vail	Va.
	A.B. 1950, West Liberty State College	
Fla.	Herman Edwin Womack	D.C.
	A.B. 1950, The George Washington University	
Md.		

MAY 27, 1953

Eleanor Beatty	D.C.	Howard Birger Lawson	
A.B. 1943, Bryn Mawr College		A.B. 1950, The George Washington University	D.C.
Ralph Gordon Bradford	Va.	Orel Klein Leonard	
A.B. 1951, The George Washington University		A.B. 1949, The George Washington University	D.C.
Albert Dannenhirsch	Pa.	Bernard Lubin	
B.S. 1942, Temple University		A.B. 1952, The George Washington University	Va.
Adolfo Solerzano Diaz	D.C.	John Joseph Lyons	
A.B. 1950, The George Washington University		A.B. 1948, Harvard University	Calif.
John Daly Fleming	D.C.	Albert Ferdinand Moe	
A.B. 1949, University of New Hampshire		B.S. 1938, University of California	Va.
Rayleona Frarkin	D.C.	Edward Carleton Moseley	
A.B. 1951, The George Washington University		B.S. 1950, Lynchburg College	D.C.
Robert Clinton Fulcher, Jr.	Md.	Ralph Ostrich	
A.B. 1949, The George Washington University		A.B. 1950, The George Washington University	Ohio
Vernon Elmer Greaver	Va.	Hazel Delphine Patton	
A.B. 1951, The George Washington University		A.B. 1951, New York University	Calif.
Bernard Harris	N.Y.	Ruth Ruhr Roy	
B.B.A. 1946, College of the City of New York		A.B. 1940, University of California	D.C.
William George Hoyt	N.Y.	Susanne Arvay Sater	
A.B. 1951, The George Washington University		A.B. 1950, Western Reserve University	N.Y.
Robert Edwin Johnson	Va.	Marshall Sanger	
A.B. in Govt. 1951, The George Washington University		B.S. 1946, United States Military Academy	D.C.
Margaret Hildreth Johnston	Md.	Shirley Lebeson Shenker	
A.B. 1951, The George Washington University		Ph.B. 1941, University of Chicago	Tenn.
Helen Betchley Jones	Va.	A.B. 1949, The George Washington University	Conn.
B.S. 1932, Syracuse University		Buford Cecil Uley	
George Walter Kahler	Va.	B.S. 1951, Memphis State College	D.C.
B.S. 1946, Temple University		Frederick Gregory Vogel	
B.L.S. 1949, Drexel Institute of Technology		A.B. 1952, The George Washington University	D.C.
Mary Ellis Kahler	Va.	Charles Wahrman	
A.B. 1949, Swarthmore College		A.B. 1952, The George Washington University	D.C.
B.L.S. 1949, Drexel Institute of Technology		Frances Rothberg Wasser	
Robert Kahn	Pa.	A.B. 1947, The George Washington University	Md.
A.B. 1945, University of Pennsylvania		Hilda Wedler	
Sidney Kaufman	Conn.	A.B. 1946, New York University	Conn.
A.B. 1951, The George Washington University		Mary Starr Wheeler	
John Jerome Kern	Md.	A.B. 1949, Wellesley College	
A.B. 1949, Catholic University of America		L.I.B. 1949, The George Washington University	

MASTER OF SCIENCE

NOVEMBER 11, 1952

Clelia Edith Campodanico V.	Panama	Walter Scott Greene III	
B.S. 1949, Mary Washington College		B.S. 1952, Syracuse University	D.C.
B.S. in Pharm. 1951, Howard College	Ohio	William Trudgeon Leapley	
Carl Edward Craig		B.S. 1943, Western Michigan College	Md.
A.B. 1947, Washington Missionary College		Charles Kenneth Mann	
Orville Wright Donnelly	Md.	B.S. in Eng. 1950, The George Washington University	
A.B. 1941, Swarthmore College			
Margaret Susanne Ellmann	D.C.		
A.B. 1951, Wellesley College			

FEBRUARY 23, 1953

Eric Davidson Brown	Va.	Edward Eliot Katz	N.Y.
B.S. 1949, Pennsylvania State College		B.S. 1950, The Citadel	
Victor Carl Brum	Mass.	Ennis Cecil Layne, Jr.	Va.
A.B. 1947, Dartmouth College		B.S. 1940, The George Washington University	
Seymour Byer	Conn.	John Bromley Moloney	Mass.
B.S. 1951, The George Washington University		B.S. 1947, Tufts College	
Bernard Howard Garhart	Va.	Nicholas Papadopoulos	Greece
B.S. in Ed. 1948, Slippery Rock State Teachers College, Pennsylvania		B.S. 1950, American University	
Edwin Ira Goldenthal	Md.	Edward James Raffelt	Md.
B.S. 1952, The George Washington University		B.S. 1949, University of Scranton	
Rosemary Imbert	Mont.	Anthony Trampus	Ohio
A.B. 1944, Montana State University		B.S. 1951, Case Institute of Technology	
		William Arthur Wood	D.C.
		B.S. 1950, Manhattan College	

MAY 27, 1953

Patricia Reese Braker	Md.	Harry Myer Rosenblatt	N.Y.
B.S. 1950, Northwestern University		A.B. 1948, The George Washington University	
William Paul Braker	Ill.	Nathaniel Rothstein	Md.
B.S. 1950, Northwestern University		B.S. 1950, The George Washington University	
Salomon Albert Danzig	D.C.	Calvin David Salzberg	Va.
B.S. 1950, The George Washington University		B.E.E. 1949, The George Washington University	
Donald Dawson	Wis.	Zulma Maria Sánchez	Puerto Rico
A.B. 1950, Lawrence College		B.S. 1952, The George Washington University	
Vernon Jack Fuller	D.C.	Richard Frederick Schmitt	Pa.
B.S. 1951, University of Maryland		B.S. 1950, University of Scranton	
Francis Austin Heckman	Pa.	Bernard Clair Smale	Md.
B.S. 1950, Lebanon Valley College		B.S. 1949, University of Pittsburgh	
Lorrie Eleanor Hoyne	Iowa	Pauline Zoe Smyrniotis	Pa.
B.S. 1950, The George Washington University		B.S. 1948, The George Washington University	
Dinnemaud Virginia Jensen	Md.	Stephen Joseph Sophia	Pa.
B.S. 1942, LaCrosse State Teachers College		B.S. 1940, University of Scranton	
Badrin Malcolm Kuskjian	Md.	Andrew John Vargosko, Jr.	Conn.
B.S. 1941, Massachusetts Institute of Technology		B.S. 1951, University of Maryland	
Margaret Ann Masters	Pa.	Helen Kathryn Waltz	D.C.
A.B. 1951, The George Washington University		A.B. 1947, Gettysburg College	
Banks Holt Mebane	Md.	Herbert Weiss	Md.
B.S. 1949, University of North Carolina		B.S. 1940, College of the City of New York	
Joseph Nobuo Nozaki	Calif.	Max Ludwig Weissmann	D.C.
A.B. 1947, Emmanuel Missionary College		B.S. 1952, The George Washington University	
George Mario Padilla	D.C.		
B.S. 1952, The George Washington University			

THE SCHOOL OF MEDICINE

DOCTOR OF MEDICINE

MAY 27, 1953

Charles Raymond Ashworth	Idaho	Gilbert Donald Barkin	D.C.
B.S. 1949, University of Idaho		B.S. 1942, The George Washington University	
Carl Eugene Balli	Ida.	Mary Ann Blue	N.C.
A.B. 1950, The George Washington University		(With distinction)	
Michael Vincent Baratta	N.Y.	A.B. 1948, University of North Carolina	
(With distinction)			
A.B. 1949, Columbia University			

Dorothy Ray Maupin Brodie	D.C.	Jack Mogen Jensen	Utah
B.S. 1949, The George Washington University		Paul L. Kingsley	Id.
Jules Isaac Cahan	D.C.	B.S. 1947, Northwestern University	
(With distinction)		M.S. 1949, University of California at Los Angeles	Md.
B.S. 1949, The George Washington University		Robert Gordon Kinaman	A.
Leonard Conrad Cobb	Wash.	A.B. 1950, The George Washington University	
B.S. 1949, University of Washington		Taylor Herman Kirby, Jr.	D.C.
Hubert Franklin Coffey	Texas	A.B. 1949, Birmingham Southern College	D.C.
Robert Tuttle Coffey	N.C.	Thomas Robert Kleh	D.C.
B.S. 1948, Wake Forest College		David Mendel Klein	Mont.
Melvin S. Cohen	N.Y.	Robert LeRoy Larson	Va.
B.S. 1948, Brooklyn College		A.B. 1949, Montana State University	
A.B. 1949, The George Washington University		Patrick James Leary	Va.
Ray Beallford Conner, Jr.	Va.	A.B. 1948, Municipal University of Omaha	
Charles David Connor	Md.	John William Leabhart, Jr.	Id.
A.B. 1949, East Carolina College		B.S. 1948, University of Pittsburgh	
Raul Costas, Jr.	Puerto Rico	Don Woodward Longestown	Idaho
B.S. 1949, Villanova College		A.B. 1950, The George Washington University	
David Stanley Davis	Ohio	Dale Hammer Magleby	Pa.
(With distinction)		B.S. 1948, A.B. 1949, Idaho State College	
A.B. 1950, The George Washington University		Carl Christopher Markwood	Utah
Robert Michael Delman	Pa.	B.S. 1949, St. Vincent College	
B.S. 1949, University of Pittsburgh		Joseph Aaron McCowin	Ariz.
Richard Hal Dobson	Kans.	B.S. 1948, Utah State College	
B.S. 1949, Kansas State College		John Gregor McGregor, Jr.	Al.
William Arthur Domann	Wis.	A.B. 1949, Stanford University	
B.S. 1948, University of Wisconsin		John Wallace McMeel	D.C.
James Douglas Doucety	N.J.	A.B. 1948, The George Washington University	
B.S. 1949, Villanova College		Thomas Francis Meaney	Va.
Keoneth Adair Drexeth	S.D.	(With distinction)	
A.B. 1949, Augustana College		B.S. 1948, Georgetown University	
B.S. 1951, University of South Dakota		Roger Randolph Mesfeld	Calif.
Charles Brighton Duffy	Nev.	B.S. 1949, University of Wisconsin	D.C.
B.S. 1949, University of Nevada		Green Columbus Miller	
Jerome Harold Eptem	D.C.	Howell Douglas Miller	N.J.
A.B. 1947, New York University		D.V.M. 1949, Agricultural and Mechanical College of Texas	
A.M. 1948, The George Washington University		Robert Thomas Miller	Ariz.
William Holmes Ferguson	Okla.	B.S. 1949, Rutgers University	
B.S. 1949, University of Tulsa		Warren James Nelson	Wis.
Charles William Foulke	Ohio	B.S. 1948, University of Wisconsin	Pa.
A.B. 1947, Ohio State University		Gerald Albert Oilschlag	Ind.
William Leonard Fyfe	Minn.	Melvin Oram	
A.B. 1949, Carleton College		B.S. 1949, University of Scranton	
John Christian Galt, Jr.	Va.	Richard Roberts Owen	Pa.
B.S. 1950, Yale University		B.S. 1949, The George Washington University	
William Henry Gillard	Pa.	Glenn Ernest Padgett	D.C.
A.B. 1948, The George Washington University		A.B. 1949, Duke University	
William Hambrook Glew	D.C.	Louis Robert Perna	Texas
B.S. 1950, Yale University		A.B. 1948, The George Washington University	
Howard Leo Gordon	Fla.	David James Pillow	
B.S. 1948, Georgetown University		(With distinction)	
M.S. 1949, The George Washington University		B.S. 1948, Texas Christian University	N.C.
Stanley Benton Gould	Md.	Charles Oliver Pylon, Jr.	D.C.
B.S. 1949, Haverford College		B.S. 1948, High Point College	
Russell Carl Grunsten	Fla.	Robert Smallwood Poole	Md.
John Thomas Harrigan, Jr.	N.J.	A.B. 1948, The George Washington University	
Forest Klaire Harris II	Md.	Bennet Allen Porter, Jr.	Calif.
B.S. 1949, The George Washington University		(With distinction)	
Paul Thomas Healy	W. Va.	Curtis Lee Price	Pa.
James Bostler Hollingsworth	Calif.	Joseph Edwin Rawlins, Jr.	
Percy John Howard	Ala.	A.B. 1950, The George Washington University	
B.S. 1949, University of Alabama			
Inez Lorraine Ice	N.Y.		
B.S. 1949, University of Rochester			
John Frederick Ice	Pa.		

Degrees Conferred

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David Joseph Rosenblum (With distinction) B.S. 1949, The George Washington University	N.Y.	Carl Edward Solomonson B.S. 1938, Western Reserve University	Ohio
Stanley Bernard Rosendorf (With distinction) B.S. 1948, University of Maryland	Md.	Harold Lewis Sperry B.S. 1942, Ohio University	Ohio
M.S. 1952, The George Washington University		James Arthur Starfield B.S. 1949, Washington State College	Wash.
Miriam Bernstein Rosenthal (With distinction) A.B. 1947, Mount Holyoke College	Md.	Jonas Hartsell Stewart, Jr. B.S. 1949, Alabama Polytechnic Institute	Ala.
Nancy Melvin Sager B.S. 1949, United States Merchant Marine Academy	D.C.	Noel Faine Strasser Gerald Edward Stronski	Ky. Mich.
A.B. 1949, Duke University		B.S. 1950, Wayne University	
Brian Webb Sanders A.B. 1949, William College	Ind.	Ernest Howard Teagle, Jr. A.B. 1949, The George Washington University	D.C.
Meagan Wesley Sandmeyer, Jr. A.B. 1949, The George Washington University	D.C.	Edward Young Cox Thorne A.B. 1949, University of North Carolina	N.C.
John William Saville (With distinction) A.B. 1950, The George Washington University	Md.	James Leonidas Tsomides A.B. 1949, Bowdoin College	Maine
Charles Frederick Simpson B.S. 1949, Wake Forest College	N.C.	Robert Irwin Tresselt B.S. 1948, The George Washington University	N.Y.
Casper Hayden Smith (With distinction)	Okla.	Clarence Houston Vann B.S. 1947, Wayne University	Mich.
		Charles George Weliso B.S. 1949, University of Wisconsin	Wis.
		Polly Teed Williams B.S. 1948, The George Washington University	D.C.

THE LAW SCHOOL

BACHELOR OF LAWS

NOVEMBER 11, 1952

Theoald Christensen Allen B.S. 1948, Cornell University	Maine	Herbert Joseph Ivers B.M.F. 1947, Cooper Union	N.Y.
Alvin Thomas Barber B.S. 1947, Sarahbanna University	Pa.	Melvin Medford Fensholt A.B. 1943, Dartmouth College	N.Y.
Robert Dean Bates B.S. 1949, University of Missouri	Mo.	Marion Moxer Fine B.S. 1948, Bucknell University	Pa.
Arthur Gosling Barnhart A.B. 1949, The George Washington University	D.C.	Frank Marshall Fisher B.S. 1943, United States Coast Guard Academy	Md.
Louell Miller Berg A.B. 1949, The George Washington University	Calif.	Maxwell Charles Freudenberg B.S. in L.E. 1949, University of Illinois	Md.
William Hauer Bergman B.S. in B.S. 1948, Georgetown University	Md.	Clarence Finkbeiner B.S. in M.F. 1944, University of Missouri	Md.
Earl W. Borchering A.B. 1949, The George Washington University	Utah	Richard Delroy Gardner B.S. 1949, Utah State Agricultural College	Utah
Alexander Dewey Calhoun, Jr. A.B. 1949, Harvard University	D.C.	Harold Herman Greene William Henry Hunsinger	Md. Va.
Ambrose Ralph Compans A.B. 1942, Pennsylvania State College	N.Y.	George Harold Hunsinger, Jr. A.B. 1948, Rutgers University	D.C.
Earl Christensen A.B. 1947, University of Montana	Pa.	Alton Miles Haynes, Jr. A.B. 1948, University of North Carolina	N.C.
Joseph Anthony DeGrandi B.S. 1949, Trinity College	Mont.	Paul Roger Holmes B.M.F. 1947, Rensselaer Polytechnic Institute	N.Y.
M.S. 1950, The George Washington University	Conn.	John Rowland Jacob Edmund Michael Jaskiewicz	N.Y. Conn.
Theodore John DiLorenzo A.B. 1950, Trinity College	Conn.	B.S. in L.E. 1947, University of Connecticut	
Richard Charles Donnelly Elizabeth Anne Elward A.B. 1949, Trinity College	D.C.	Vincent James Jennings A.B. 1948, Yale University	Va.

Murray Katz	N.Y.	William John Scherback	Va.
B.Ch.E. 1947. College of the City of New York		B.S. in E.E. 1946. University of Wisconsin	Wis.
Alexander Young Ha Kim	Hawaii	Raymond Alois Servais	N.D.
A.B. 1949. University of Hawaii		A.B. 1950. The George Washington University	
William George Konold	Ohio	William Edward Shenko	W.Va.
B.E.E. 1949. Cornell University		B.S. 1950. North Dakota Agricultural College	
Jack Larson	Mich.	Elizabeth Wise Shugart	Va.
A.B. 1943. Princeton University		A.B. 1947. Ohio State University	
A.M. 1947. University of Michigan		Clarence Wilbur Spangle	Pa.
Joseph John Lelevich	Pa.	B.S. in Eng. 1945. Yale University	
B.S. 1941. Pennsylvania State College		John Paul Spock	N.Y.
Joseph Levinson	Ill.	A.B. 1950. University of Maryland	
B.S. in E.E. 1949. University of Illinois		Stefan Martin Stern	Va.
James William Love	Pa.	A.B. 1948. Cornell University	
David Daniel Lowman	Wash.	Nelson Alexander Stitt	Ind.
A.B. 1949. Stanford University		A.B. 1948. University of Pittsburgh	
Jenny Lederer Matchman	N.Y.	Albert Donald Stolzy	Mass.
A.B. 1947. Smith College		B.S. in E.E. 1949. Rose Polytechnic Institute	
Andrew Marchison	N.J.	Ralph Hall Sullivan	Pa.
B.S. 1950. Georgetown University		B.B.A. 1942. Boston University	
Louis Francis Mazza	Md.	M.S. 1949. Simmons College	
Helen Mary McCarthy	Mass.	Anthony Joseph Turchetti	Conn.
A.B. 1943. Regis College		B.S. in Aero. Eng. 1945. M.S. in M.E. 1947. Pennsylvania State College	
Melvin Joseph McGowan	Ill.	Edward William Urban	Hawaii
A.B. 1949. Coe College		A.B. 1950. Elmhurst College	
John Edwin McRae	Mich.	John Takeji Ushijima	Nov.
B.Ch.E. 1948. University of Detroit		A.B. 1950. Grinnell College	
Melvin Eugene Miller	Pa.	James Leo Wadsworth	D.C.
Matthew Sharo Muir, Jr.	Hawaii	A.B. 1948. Brigham Young University	
B.B.A. 1944. University of Washington		Robert Bellarmin White	D.C.
John Joseph Murray, Jr.	Mass.	Courtney Whitney, Jr.	N.Y.
B.S. 1949. Boston College		A.B. 1949. Yale University	
William David Palmer	Va.	Leo Wilder	Hawaii
B.S. 1943. United States Coast Guard Academy		B.M.E. 1949. College of the City of New York	
Edward Andrew Potts	Pa.	Elias Perfecto Yadao	D.C.
A.B. 1949. University of Michigan		A.B. 1949. University of Hawaii	
Joseph Edward Ruskiewicz	Pa.	David Young	Maine
B.S. in E.E. 1948. University of Pittsburgh		B.M.E. 1949. Cooper Union	
Mary Ann Sames	Mo.	John Thomas Young	
A.B. 1947. University of Missouri		A.B. 1950. University of Maine	

FEBRUARY 23, 1953

Frank Leo Abern, Jr.	D.C.	Armon Davis Acheson Crawford	Md.
B.S. in M.E. 1944. Cornell University		B.S. 1950. United States Naval Academy	
Richard Norman Baylinson	N.J.	Wilbur Chamberlain Davis	Md.
Otto Edward Bjorklund	Md.	A.B. 1950. University of Maryland	D.C.
A.B. in Govt. 1950. The George Washington University		Benjamin Franklin Dean	
Richard Francis Brox	Wash.	A.B. 1950. The George Washington University	Md.
Francis Henry Burns	Pa.	John Parker Dodge	Mass.
John Joseph Casey	Pa.	A.B. 1949. Johns Hopkins University	
Antonia Handler Chayes	Va.	William Stephen Dorman	
(With distinction)		B.S. 1948. Worcester Polytechnic Institute	Va.
A.B. 1949. Radcliffe College		John Emerson Forry	
Euclid Chu	D.C.	B.S. in M.E. 1950. Oklahoma Agricultural and Mechanical College	Mass.
Raymond Dykes Clark	Va.	Jordan Franklin	D.C.
B.S. 1948. University of California at Los Angeles		B.S. 1946. Worcester Polytechnic Institute	
John Daniel Connelly	Pa.	Melvin Myron Goldenberg	
B.S. 1950. College of the Holy Cross		B.M.E. 1949. Catholic University of America	Md.
Joseph John Connerton	Pa.	David Isadore Haberman	D.C.
B.E.E. 1949. Catholic University of America		Roger Hansel	
Arthur Coppel	N.Y.		
A.B. 1949. University of Virginia			
William Wood Craddock	Md.		

Eugene Gregory Horsky B.S. 1948, B.C.E. 1949, Rensselaer Polytechnic Institute	N.Y.	Frank Corner Roller B.S. 1949, University of Arizona	D.C.
Robert Bruce Hughes, Jr. A.B. 1948, University of Cincinnati	Va.	William Albert Rooney John Wesley Roten	Wash. W.Va.
Hazop Herach Jamgochian A.B. 1949, Clark University	Mass.	Thomas Hale Russell A.B. 1949, Harvard University	Va.
Harold George Jarcho B.S. in E.E. 1940, Rhode Island State College	R.I.	Charles Patrick Ryan Charles William Smith	Pa. Va.
Michael Harris Karr B.S. in E.E. 1937, New York University	Va.	A.B. in Govt. 1951, The George Washington University	Fla.
Jerome Eli Korpeck A.B. 1947, University of Rochester	N.Y.	William Donald Soltow, Jr. B.M.E. 1948, Rensselaer Polytechnic Institute	Fla. Va.
John Creig Lawrence B.S. 1949, United States Naval Academy	Md.	Frank James Soucek B.E.E. 1948, The George Washington University	Pa.
Robert Conrad Lehnert Edwin Lester B.E.E. 1949, Rensselaer Polytechnic Institute	N.Y. N.Y.	Harold Eugene Stambaugh B.S. 1948, University of Pennsylvania	Fla.
Thomas Scott MacDonald B.M.E. 1945, Rensselaer Polytechnic Institute	N.Y.	John Stephens A.B. 1946, The George Washington University	Texas N.Y.
Carl Franklin McIntyre James Oakes McKee A.B. 1942, Knox College	N.C. Ill.	Patrick Gerald Sullivan B.S. in M.E. 1940, College of Mines Metallurgy, Texas	N.Y.
Katango Miho A.B. 1949, University of Hawaii	Hawaii	Leonard Summer B.S. 1931, M.S. 1938, College of the City of New York	Hawaii
Charles Bradford Mitchell Ph.B. 1928, A.M. 1929, Wesleyan University	N.H.	George Morito Takane A.B. 1950, University of Hawaii	Calif.
A.M. 1928, Ph.D. 1939, Harvard University		William Hajime Tanaka A.B. 1950, University of California at Los Angeles	Ky. D.C.
Donald Clark Morrell A.B. 1949, Colgate University	Md.	Frederick Henry Theobald William Bates Thomas	
John Joseph O'Connell Stanley Wilhelm Petersen A.B. 1941, The George Washington University	Md. N.Y.	A.B. in Govt. 1951, The George Washington University	Mo.
Robert Earl Palfrey B.S. 1947, Jamestown College	Va.	Walter Treumann A.B. 1946, Washington University	W.Va.
Robert Russell Reque Donald Jenkins Rich Alvin Joseph Riddles B.E.E. 1949, Catholic University of America	D.C. Md. Pa.	A.M. 1948, University of Chicago John Andrew Vance B.S. 1951, Fairmont State College	N.Y.
Robert Lorain Rissler A.B. 1947, Shepherd College	W.Va.	Sherwin Elhu Weiss A.B. 1950, Brooklyn College	Md.
Irvin John Rutterpusch A.B. 1950, University of Maryland	Md.	George Samuel Workinger A.B. 1951, The George Washington University	Kans. Hawaii
		Max Lee Wymore B.S. in Ch.E. 1947, University of Kansas	
		William Harry Yim A.B. 1949, University of Hawaii	

MAY 27, 1953

Walker Eldon Anderson B.S. 1951, University of South Carolina	S.C.	James Sanders Boone A.B. 1950, University of California	Calif.
Frederick Bates Arner A.B. 1947, Kenyon College	D.C.	George Newton Cade, Jr. B.S. 1933 A.M. 1935, University of Arkansas	Va.
William Batchelder Bennett B.S. 1935, University of New Hampshire	Va.	Byron David Casteel A.B. 1955, University of Texas	Ark.
A.M. 1936, Ph.D. 1941, Louisiana State University		M.D. 1941, Harvard University M.P.H. 1949, Johns Hopkins University	N.Y.
Stanford Warner Berman B.S. in M.E. 1950, University of Maryland	D.C.	Donald John Caulfield A.B. 1951, The George Washington University	N.Y.
Harold Ralph Berson A.B. in Govt. 1949, The George Washington University	Nev.	Fred Robert Cerf A.B. 1949, New York University	N.Y.
Leonard Saul Blomler A.B. 1951, Western Reserve University	D.C.	Donald Dai Heong Ching A.B. 1950, University of Hawaii	Hawaii
		James Brent Clarke, Jr.	D.C.

Alexander John Couble	Va.	Robert Charles Mayer	D.C.
B.S. 1949, United States Naval Academy		B.S. 1948, Georgetown University	Va.
Robert Gladden Crooks	D.C.	William Thomas McDermott	
B.S., M.S. 1949, Massachusetts Institute of Technology		B.S. 1935, University of New Hampshire	N.Y.
Frank Haseman Ostalar	Pa.	Ed.M. 1936, Boston University	
B.S. in Ed. 1948, Pennsylvania State Teachers College, West Chester		Charles John McPeak	Md.
John Joseph Daly	Va.	A.B. 1932, St. John's University	Kans.
A.B. 1949, The George Washington University		Victor Mario Mervochiano	
James George Dieter	Kans.	Alva Donald Messenheimer	Md.
B.S. 1949, Kansas State College		B.S. in E.E. 1947, Kansas State College	
Honore Robert DiMartino	D.C.	Douglas Hamilton Moore, Jr.	
Leslie Vernon Dix	Va.	B.S. 1950, The George Washington University	Ill.
A.B. 1950, Iowa State Teachers College		Jack Curtis Morris	N.J.
John Edwidge Donaldson, Jr.	Va.	A.B. 1949, Columbia University	
A.B. in Govt. 1949, The George Washington University		John J. Nachtsheim	Md.
Thomas James Dougherty	Va.	B.S. 1947, Webb Institute of Naval Architecture	Pa.
A.B. 1951, The George Washington University		John Willard Nalla, Jr.	
Wayne J. Dougherty	Iowa	Ellington Murray Norman	N.Y.
A.B. 1941, State University of Iowa		A.B. 1944, University of Georgia	
Abraham Frankel	N.Y.	Henry Norman	W.Va.
B.S. 1941, Brooklyn College		A.B. 1951, Western Maryland College	
B.M.E. 1941, Cooper Union		Margaret Pallanach	Va.
Kenneth Samuel Gorobed	Nebr.	A.B. 1940, Trinity College	
A.B. 1951, The George Washington University		Charles H. Parker	Pa.
David Allen Grammer, Jr.	N.M.	B.S. 1943, Worcester Polytechnic Institute	
B.B.A. 1947, University of Texas		LeGrand Winfield Perce III	D.C.
Gerald William Hammer	Va.	A.B. 1950, The George Washington University	
A.B. 1950, Ball State Teachers College, Indiana		Frederick William Raring	Mass.
John Webster Hardwicke	Md.	B.S. 1949, Lehigh University	
A.B. 1950, University of North Carolina		James Gavin Reardon	Utah
Frank Edmund Hart	Calif.	A.B. 1950, College of the Holy Cross	
B.S. 1948, University of San Francisco		Vernon Bradford Romney	N.Y.
Irving Mark Hecht	Md.	B.S. 1948, University of Utah	
B.S. 1948, College of the City of New York		Helen Miller Rosenbhal	N.C.
James Grant Hellmuth	Va.	(With distinction)	S.C.
B.S. 1948, Yale University		A.B. 1950, Wellesley College	
Edwin Nott Henson, Jr.	D.C.	Frank Powell Sanders	
A.B. 1948, The George Washington University		Mazine Scarborough	
Luis Benedetto Henson	D.C.	A.B. 1937, University of South Carolina	Va.
B.S. 1950, Wilson Teachers College		A.M. 1947, Columbia University	
William Hintze	Md.	Harry George Sells	Va.
B.E.E. 1949, The George Washington University		A.B. 1949, University of Pittsburgh	
William Collis Holcombe	Va.	James Steek Sherwood	Hawaii
A.B. 1946, The George Washington University		A.B. in Govt. 1947, The George Washington University	N.Y.
Calvin Clark Jones	Va.	Alvin Tong Shum	
Edward Floyd Kilpatrick	D.C.	A.B. 1949, University of Hawaii	
A.B. 1943, University of Missouri		Rose Skalak	D.C.
Casimir Thaddeus Krol	Ill.	A.B. 1950, Hunter College	
A.B. 1947, St. John's College		B.S. in L.S. 1949, Columbia University	
Vasilios Simos Lambros	Md.	Harold Smith	Md.
M.D. 1949, Georgetown University		A.B. 1951, The George Washington University	
Ernest Henry Land	Ill.	Harold Calmes Smith, Jr.	
A.B. 1950, Illinois College		A.B. 1950, The George Washington University	D.C.
James Fugate Lawrence, Jr.	N.C.	Jennings Talbot Smith	
B.S. 1941, University of North Carolina		A.B. 1950, The George Washington University	
Thomas Perry Lippitt	D.C.	John Henry Spaulding	Mass.
George Freeland MacKay	Md.	A.B. 1949, The George Washington University	
A.B. 1950, Tufts College		Arnold Charles Sternberg	
		A.B. 1947, University of Wisconsin	

Degrees Conferred

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Edwin Cornelius Sweeney A.B. 1939, University of Kentucky M.D. 1943, Tulane University	Ill.	William Granville Tinsley A.B. 1939, Centre College Gerard Gordon Weil	Va. N.Y.
Stuart Hackstaff Sweeney A.B. 1940, Upsala College	Md.	A.B. 1948, Washington and Jefferson College	
James Dimitri Tamos A.B. 1949, University of Pennsylvania	Va.	Alfred Lawson White	Md.
Andrew Eustace Taylor B.S. in M.E. 1947, Tufts College	Md.	Thomas Bennett Wood B.B.A. 1941, University of Texas	Texas

JURIS DOCTOR

NOVEMBER 11, 1952

George James Charles A.B. 1950, University of Pennsylvania (With distinction)	Pa.	William Stuart McLennan B.S. 1947, University of Oregon	Oreg.
Sheldon Stanley Cohen A.B. in Govt. 1950, The George Washington University	Md.	Bruce Glueck Thompson B.C.L. 1948, Catholic University of America	D.C.
William Elliott Fuller B.S. 1944, United States Coast Guard Academy	N.J.	A.M. 1950, The George Washington University	
James Clark Heatherly A.B. 1950, University of Tennessee	Tenn.	James Mahan Roamer, Jr. B.C.E. 1950, The George Washington University	D.C.
Daniel Ken Inouye A.B. 1950, University of Hawaii	Hawaii	John Regan Stark A.B. 1948, Cornell University M.P.A. 1949, New York University	Va. N.Y.
Harold Jacobstein B.S. 1949, State Teachers College, Indiana, Pa.	Pa.	George Ward Whitney B.E.E. 1949, Rensselaer Polytechnic Institute	
Lawrence Stanley Levinson B.S. 1948, Rutgers University A.M. 1949, Columbia University	N.Y.		

FEBRUARY 23, 1953

Jack Armore B.S. 1950, College of the City of New York	N.Y.	Nad Alma Peterson A.B. 1950, The George Washington University	Utah
Edna Anne Asper A.B. 1950, University of Pittsburgh	Pa.	Frank Edward Robbins, Jr. B.C.E. 1944, Rensselaer Polytechnic Institute	Va.
Isidore David Blumenfeld B.S. in E.E. 1949, Case Institute of Technology	Ohio	Robert Franklin Sagie A.B. 1951, The George Washington University	Md.
Irving Seth Levine (With distinction) B.S. M.S. 1941, Massachusetts Institute of Technology	N.Y.		

MAY 27, 1953

Robert Oakleigh Bloch A.B. 1949, The George Washington University	Nebr.	Earl Winslow Johnson B.S. 1943, Pennsylvania State College	Pa.
James Henry Doyle, Jr. (With distinction)	Calif.	Melvin Herbert Kent B.S. 1941, Indiana University	Ind.
B.S. 1946, United States Naval Academy		Derek Peter Lawrence B.M.E. 1948, Clarkson College	Va.
John David Eaton (With distinction)	Mass.	Clyde Robinson Mann B.S. 1947, East Carolina College	Fla.
B.S. 1944, United States Naval Academy		Stewart Fawcett Moore A.B. 1941, Bethany College	W.Va.
Clyde Vernon Erwin, Jr. A.B. 1950, North Central College	Ill.	B.S. in P.E. 1948, Carnegie Institute of Technology	
Paul James Fitzhugh B.S. 1946, Iowa State College	Va.	Vernon Arno Foltzer (With distinction)	Ill.
Henry Frederick Hamann Ph.B. 1945, University of Wisconsin	Va.	A.B. 1941, DePauw University	

William Ross St. George (With distinction) B.S. 1946, United States Naval Academy	N.C.	Simon Tucker (With distinction) B.S.S. 1940, College of the City of New York	Va.
William Robert Sherman B.S. 1946, University of Wisconsin	Va.	M.P.A. 1941, New York University	D.C.
George Mufford Terry A.B. 1947, The George Washington University	Md.	Sheldon William Witcoff B.S. 1949, University of Maryland	

MASTER OF LAWS

NOVEMBER 11, 1952

John Patten Abshire A.B. 1947, University of Chattanooga LL.B. 1949, Vanderbilt University	Tenn.	William John Ostrowski A.B. 1949, Canisius College LL.B. 1951, Georgetown University	N.Y.
Philip Reilly Collins A.B. 1949, LL.B. 1942, Loyola University	La.	Leroy Robinson B.S. 1950, LL.B. 1951, Wake Forest College	N.C.
A.M. 1948, Ph.D. 1950, Georgetown University		Walter Hoersch Sitz B.S. 1916, United States Naval Academy	D.C.
James Gilbert Evans, Jr. A.B. 1947, University of North Carolina	Va.	M.S. 1922, Massachusetts Institute of Technology	
LL.B. 1950, University of Virginia		LL.B. 1932, The George Washington University	Ala.
A'lan Stanton Hutcheson B.S. 1948, St. Martin's College LL.B. 1951, The George Washington University	Wash.	John Milton Stockton LL.B. 1948, A.B. 1951, University of Alabama	Pa.
Jair Shalom Kaplan A.B. 1940, LL.B. 1948, New York University	N.Y.	Edgar Alban Wren A.B. 1937, University of Scranton LL.B. 1948, Georgetown University	
Dwight William Langham B.S. 1938, University of Illinois LL.B. 1952, Georgetown University	Ill.		

FEBRUARY 23, 1953

Joseph Alderman LL.B. 1949, Columbia University	N.Y.	Donald Joseph Harrington B.S.E. 1946, University of Michigan LL.B. 1951, University of Detroit	Mich.
Leonard Phillip Aries Ph.B. 1940, J.D. 1932, University of Chicago	Ill.	John Joseph Jaskot LL.B. 1951, The George Washington University	Pa.
James Joseph Coyle LL.B. 1948, The George Washington University	Mont.	Sergius Felix Luboshes B.S.C. 1918, University of London Barrister-at-Law 1926, Middle Temple	Md.
George Marsh Flint, Jr. A.B. 1940, Harvard University LL.B. 1945, The George Washington University	Mass.	William Reback LL.B. 1951, The George Washington University	D.C.

MAY 27, 1953

Carl William Belcher A.B. 1946, Duke University LL.B. 1952, The George Washington University	Ky.	Roy Theodore Engler A.B. 1944, Vanderbilt University LL.B. 1951, Columbia University	Va.
Cyril Francis Brickfield LL.B. 1948, Fordham University	N.Y.	James Carleton Fleming A.B. 1949, LL.B. 1951, Duke University	N.C.
John Reeder Bronaugh B.S. in M.E. 1947, Virginia Polytechnic Institute J.D. 1951, The George Washington University	D.C.	James Kenneth Gaynor B.S. 1946, J.D. 1950, Indiana University	Ind.
Lawrence Robert Caruso A.B. 1940, LL.B. 1950, The George Washington University	N.J.	John Christopher Keeney B.S. 1947, University of Scranton LL.B. 1949, Dickinson School of Law	Pa.
Carl Clegg Davis B.S. 1942, Oklahoma Agricultural and Mechanical College LL.B. 1949, University of Oklahoma	Okla.	William Leonard Keller LL.B. 1950, Southern Methodist University	Tenn.
		John Joseph Mitchell B.S. 1937, Boston College LL.B. 1942, Georgetown University	Mass.

Frank Richard Ortolani B.S. 1944, B.S. in Ch.Eng. 1948, Pennsylvania State College LL.B. 1951, The George Washington University	Pa.	Abraham Siegel B.S. 1940, College of the City of New York J.D. 1950, The George Washington University	Calif.
Walter Franklin Sheble A.B. 1948, Princeton University LL.B. 1952, The George Washington University	D.C.	David Johnson Vann B.S. 1950, LL.B. 1951, University of Alabama James Zett A.B. 1938, Middlebury College LL.B. 1945, Syracuse University	Ala. Va.

MASTER OF COMPARATIVE LAW

NOVEMBER 11, 1952

W. Rancap LaGumbay B.S.C. 1950, Far Eastern University LL.B. 1951, Manuel L. Quezon School of Law	Philippines
--	-------------

FEBRUARY 23, 1953

Farquair Nabi Alefi A.B. 1940, Kabul University	Afghanistan
--	-------------

MAY 27, 1953

Jose Abad Santos, Jr. Ph.B. 1941, University of the Philippines LL.B. 1949, University of Santo Tomas	Philippines	Georges René Delaume Doctor of Laws 1946, University of Paris Diosdado de la Fuente Guytingco LL.B. 1940, University of Santo Tomas	France Philippines
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MASTER OF COMPARATIVE LAW (AMERICAN PRACTICE)

NOVEMBER 11, 1952

Liselotte Bunge Watson S.J.D. 1939, University of Bonn	Va.
---	-----

FEBRUARY 23, 1953

Hans Strauss LL.D. 1925, University of Cologne	D.C.
---	------

MAY 27, 1953

Jaroslav Jira J.U.D. 1953, Charles University of Prague	D.C.
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THE SCHOOL OF ENGINEERING

BACHELOR OF CIVIL ENGINEERING

NOVEMBER 11, 1952

Edmund Crump Hughes	D.C.
---------------------	------

FEBRUARY 23, 1953

George Patrick Cummings	D.C.
-------------------------	------

MAY 27, 1953

Victor Battani, Jr.	Calif.	Robert Francis Kurisch	Va.
Robert Samuel Burns	Va.	Alfred Bux Moe	Va.
Edward Richard Caldwell	D.C.	A.B. 1949, The George Washington	D.C.
John Estes Dale	Md.	University	Va.
Wilbur Henry Eskete, Jr.	Md.	John Joseph Onufrak	
Vincent Nelson Hobday	D.C.	Daniell Elmer Rodgers	

BACHELOR OF ELECTRICAL ENGINEERING

NOVEMBER 11, 1952

Benjamin Ernest Anderson, Jr.	Md.	Herbert Jennings Stotler	Va.
Louis Guy Smith, Jr.	Mich.		

FEBRUARY 23, 1953

Raymond Allen Dewberry	Va.	Saul Pincus	
David Leonard Greenberg	Md.	B.S. 1941, College of the City of	
Gordon Albert Nicolaisen	Md.	New York	

MAY 27, 1953

James Dunford Appel	Md.	Arthur Edwin Proctor	
B.S. in M.E. 1949, Pennsylvania		Michael Brandes Rapport	
State College		William Morton Reiter	
Pickard Fowler Bargh	Va.	James Lawrence Robb	
John Sturges Beers	D.C.	Edwin Paul Schweizer	
Francis Gerard Browning	Md.	(With distinction)	
Clarence Peter Christensen	Md.	Walter Conrad Sport	
Morton Fischman	D.C.	Nikola Danilsha Stansavljevich	
Waldo Ross Gestman	Md.	Charles Russel Summers	
Robert William Green	D.C.	A.B. 1936, A.M. 1938, State College	
Charles Russell Lasehlin, Jr.	Va.	of Washington	
Paul Frederick Matheson	Md.	George Dayton Sweetnam	
Homer Dewey Musselman	D.C.	Edward Alexander Wareham III	
Charles Paul Okopinaki	Va.	Howard W.	
William Hamilton Pindell, Jr.	D.C.	Levern Landis Ziegler	

BACHELOR OF MECHANICAL ENGINEERING

NOVEMBER 11, 1952

William Milo Thornton	Va.
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FEBRUARY 23, 1953

Robert Coile Baumann	Va.	Richard Alexander Sorrell	
Edward Andrew Cooke	Va.		

MAY 27, 1953

Choeyakupuvanda Bhimaya Ayapa	India	William Joseph Hamon	
Joseph Michael Bellak	Ind.	Harry Kriemelmeyer, Jr.	
Harold Loomis Boyd	Va.	Irving Mathis	
(Special honors in Mechanical		Richard Edward Nearman	
Engineering)		Virgil Lewis Pence	
James John Charubas	D.C.	Lincoln Edwin Roberts	
Henry Dollar	Md.	Milton Alex Stoxall	
B.C.E. 1947, College of the City of			
New York			

BACHELOR OF SCIENCE IN ENGINEERING

NOVEMBER 11, 1952

Bob Rose	D.C.
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FEBRUARY 23, 1953

James White Brown, Jr.	Va.	William Walter McMillan	Va.
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MAY 27, 1953

Robert Theodore Alexander B.S., 1944, United States Coast Guard Academy	Ohio	Beverly Jean Hamon (Special honors in Pharmacy)	D.C. Md. Va.
M.S., 1940, University of Michigan		John Temple Hughes B.I.E., 1952, The George Washington University	
Daniel John Baskley	N.Y.		
Paul Oliver Drury, Jr.	D.C.		

THE SCHOOL OF PHARMACY

BACHELOR OF SCIENCE IN PHARMACY

FEBRUARY 23, 1953

James Bowman Fahrney	Va.	Lloyd Arthur Waller	Va.
Francis Richard Malone	D.C.		

MAY 27, 1953

Alvin Sacks Bernstein (Special honors in Pharmacy)	D.C.	Marvin Freedenberg A.B., 1950, West Virginia University	D.C.
A.B., 1950, University of Maryland		Samuel F. Frishman	N.Y.
Seymour Arthur Benson (Special honors in Pharmacy)	N.J.	Geoffrey Karl Kessler (Special honors in Pharmacy)	D.C.
B.S., 1949, Tulane University		Joseph Thomas Kishah	Pa.
Adopt. Paul Bissini	Pa.	Earl Howard Robinson	Va.
B.S., 1949, The George Washington University		Thomas Alva Edison Shoemaker, Jr.	D.C.
Jack Preston Blank	D.C.	Ray E. and Sallie	D.C.
Andrew Bear Blake	Md.	Thomas Pymon Sweeney	Conn.
Gerold Yale Lee later	D.C.	B.S., 1946, Georgetown University	
William Beach Davine	Va.	Robert Ferdinand Tomasko	D.C.
Lucy Weiss Dove	Md.	B.S., 1950, University of Maryland	
Frederick Stephen Fienbacher (Special honors in Pharmacy)	D.C.	Barlow Jacob Warman (Special honors in Pharmacy)	D.C.
		Wilfred Arthur Neil Wilson	Md.

THE SCHOOL OF EDUCATION

BACHELOR OF ARTS IN EDUCATION

NOVEMBER 11, 1952

Ruth Martha Anton	Iowa	Carmel Rebecca Pence	D.C.
Katharine Jefferson Boston	Va.	Grace Alice Pence	D.C.
Marjorie Helen E. Emer	Va.	Dolores Shaw	D.C.
Leta Evelyn Griffith	Va.		

FEBRUARY 23, 1953

Mary Brant	Pa.	Barbara Gouvalas Konze	Va.
Joseph Anthony Courtney III	Va.	Virginia Marie Perrott	Va.
Giles Monroe Laxley	Texas	Amina Sadek	Egypt
Janet Rose Goldenberg	D.C.		

MAY 27, 1953

Freda Sturm Bertram	Va.	James Conell Reese	Va.
John Gordon Bowwell	Md.	Johnnie Humphreys Roseman	Va.
Jerome Chase La Caprio	N.J.	Bettie Reed Millett Roudabush (With distinction)	Va.
Elizabeth Anne Fendburghouse	D.C.	Ramona Samples	Va.
Norman Hamilton Gray	Va.	Anna Helene Schaum	Cuba
June Virginia Ineson	D.C.	Nora Seral	D.C.
Marlene Marie Monson	Iowa	Edgar Minter Tupman	Del.
Anita Maxine Northrop (With distinction)	Va.	Kathleen Lennon Underwood	Va.
Harolyn Orleans	D.C.	Lucy Vance	W. Va.

BACHELOR OF SCIENCE IN HOME ECONOMICS

FEBRUARY 23, 1953

Marjorie Virginia Rodgers

Fla.

MAY 27, 1953

Ruth Marie Bray
 Patricia Anne Carlisle
 Ruth Jean Coates
 Gracia Alice Cochran
 Anna Marie Cooper
 Angela Lucia Gordon

Ohio Claire Eleanor Helwege
 Va. Joyce Elizabeth Johnson
 D.C. Bertha Roseman Liebersohn
 Va. Iva Muriel Ott
 Pa. Joan Halford Rohlfing
 Va. Mildred Lee Saunders

Va.
 Iowa
 Md.
 Ark.
 Hawaii
 Va.

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

NOVEMBER 11, 1952

Joseph Gerard Kennelly
 Aredis Vahan Kojovian
 Thomas Hooper Rielly

D.C. John Thomas Tivnan, Jr.
 Mass. John Joseph Yednock
 Pa.

Mass.
 D.C.

FEBRUARY 23, 1953

Robert Leslie Parkinson

Ind.

MAY 27, 1953

Geraldine Applestein
 Urbino Joseph Barreira
 Daniel Leviton
 Anita Pablo Montehermoso

N.Y. George King Moxley
 Mass. Abbie Hanahan Oliver
 D.C. Raymond Ward Walter, Jr.
 Philippines

Ge.
 D.C.

MASTER OF ARTS IN EDUCATION

NOVEMBER 11, 1952

Wilma Alethea Bailey
 B.S. in Ed. 1944, State Teachers
 College, California, Pa.
 Russell William Bowman
 B.S. 1951, Johns Hopkins University
 Alma Phillips Brown
 A.B. 1936, Limestone College
 Grace Miller Bulman
 B.S. 1924, Columbia University
 Craigbuhl Stoner Burks
 B.S. 1941, Hampden-Sydney College
 William Weedon Cloc, Jr.
 A.B. 1940, College of William and
 Mary
 Harold Allan Foutty
 A.B. 1948, Glenville State College
 Edna Stutler Grubb
 A.B. in Ed. 1951, The George
 Washington University
 Albert Michael Haringer
 B.S. in P.E. 1948, The George
 Washington University
 Mary Elizabeth Homer
 B.S. in Ed. 1950, Kent State
 University
 Joseph Richard Huber
 B.S. in F.S. 1950, Georgetown
 University
 Marvonne Hurley
 A.B. 1948, Geneva College
 Joseph Anthony Kulick
 B.S. in Ed. 1940, State Teachers
 College, Bloomsburg, Pa.

Pa. Mary Gamble Kump
 A.B. 1916, West Virginia University
 Lillian Merle Lambert
 B.S. 1934, Madison College
 Theodore Dalmus Matthews, Sr.
 A.B. 1936, Shepherd State Teachers
 College
 D.C. Norma Miller
 B.S. in Ed. 1943, Indiana University
 Va. Anna Lou Mitchell
 B.S. in Ed. 1942, University of
 Georgia
 Va. Claude Oliver Morrison
 B.S. in Ed. 1932, University of
 Nebraska
 Md. William Raymond O'Meara
 A.B. in Ed. 1950, The George
 Washington University
 W.Va. Carolina Jimenez Pascual
 A.B. 1938, B.S. in Ed. 1939,
 Philippines Women's University
 Va. Dale Everett Potts
 B.S. 1949, Eastern Illinois State
 Teachers College
 Ohio Madolyn Roshpater Powers
 A.B. 1949, Capital University
 Va. Hattie Gilley Quinley
 B.S. 1942, Radford College
 Pa. Eric Foster Rhodes
 A.B. in Ed. 1950, The George
 Washington University
 D.C. Louis Rubin
 B.S. 1950, Wilson Teachers College

W.Va.

Va.

W.Va.

Ind.

Va.

Nebr.

D.C.

Philippines

Va.

Ohio

Va.

Va.

D.C.

Elaine Marie Skucius	Nebr.	Janet Brown Stine	Md.
B.S. 1945, University of Nebraska		A.B. 1949, Oberlin College	
Helen Elizabeth Sloulin	Wis.	Emma Louise Thompson	D.C.
B.S. in Ed. 1948, Wisconsin State		B.S. 1951, Wilson Teachers College	
Teachers College, La Crosse		Fanny Fay Yeldell	Texas
Mary Louise Smith	Ga.	A.B. 1942, University of Texas	
B.S. 1946, University of Chicago			

FEBRUARY 23, 1953

James Edwin Bailey	Minn.	Elsie Murtagh Hurley	Va.
B.S. 1941, Duluth State Teachers		B.S. 1939, College of the City of	
College		New York	
LL.B. 1947, Georgetown University		Daniel Mason Jones	W.Va.
Doris Sidney Blake	Va.	A.B. 1949, Shepherd College	
A.B. 1950, Radcliffe College		George Hadley Landes, Jr.	Va.
Patricia Pope Bowling	D.C.	B.S. 1950, Wilson Teachers College	
B.S. in P.E. 1949, The George		Rachel Catharine McInteer	D.C.
Washington University		B.S. 1932, Columbia University	
Rosanna Bright	Md.	Ethel Joe Schubert	Md.
A.B. 1939, Hunter College		A.B. 1928, Beloit College	
Ruth Hinkle Brunner	W.Va.	Ernestine Bruner Wallace	Ala.
B.S. in P.E. 1941, The George		B.S. in Ed. 1948, Alabama State	
Washington University		Teachers College, Troy	
Nita Eugenia Greene	D.C.	Eugenia Walyco	Md.
B.S. 1941, Catholic University of		A.B. 1930, Hunter College	
America		Anne Snyder Webb	W.Va.
Myna Lee Heltsley	Ga.	A.B. 1948, Shepherd College	
A.B. 1942, University of Kentucky			

MAY 27, 1953

Edward Welch Baker	D.C.	Dorothea Glenna Jerome	Va.
A.B. in Ed. 1952, The George		A.B. in Ed. 1951, The George	
Washington University		Washington University	
Robert William Bosen	Va.	Helen Rector Jones	Va.
A.B. 1942, University of Pennsylvania		B.S. 1948, Madison College	
Anna Emile Bracken	Md.	Walter Warren Jones	Va.
B.S. 1948, University of Maryland		A.B. in Ed. 1950, The George	
William Francis Brennan	D.C.	Washington University	
B.S. 1949, University of Scranton		Isabelle Kaye	Md.
Hazel Boudinot Cook	N.H.	A.B. 1947, University of California	
A.B. 1946, Middlebury College		at Los Angeles	
Sarah Adelaide Dale	Va.	Raymond Boomer Leavitt	Md.
A.B. 1940, Western Washington		B.S. 1924, United States Naval	
College of Education		Academy	
Salvador del Rio	Puerto Rico	Marjorie Castle Meyers	Md.
A.B. 1942, University of Puerto Rico		B.S. 1940, Indiana College	
Alice Perkins Dew	Va.	Gustave David Milner	D.C.
A.B. 1947, Mary Washington College		B.S. in P.E. 1950, The George	
Harnet May Gerber	N.Y.	Washington University	
B.S. in Ed. 1947, New York State		Doris Hagmann Mortimer	D.C.
College for Teachers		B.S. 1950, Ohio State University	
Edward Harrison Green	D.C.	Sally Lou Powell	D.C.
B.S. in P.E. 1951, The George		A.B. 1952, Georgia State Woman's	
Washington University		College	
Joseph Lewis Griffiths	Va.	Mary Whaley Rasmussen	W.Va.
B.S. 1941, Northwestern State College		A.B. 1949, The George Washington	
Maynard Keithin Harthrock	Md.	University	
B.S. in P.E. 1949, The George		Wylie Hayden Russell	D.C.
Washington University		A.B. 1944, Ed.M. 1949, Oklahoma	
Eva Maxine Bollinger Halliday	Va.	City University	
A.B. in Ed. 1949, Glenville State		Rachel Phyllis Sollen	Pa.
Teachers College		B.S. in Ed. 1952, University of	
Erastus Jerome Heglar	Va.	Pennsylvania	
A.B. 1929, Catawba College		Myrtle Thomas	D.C.
Edmund Schley Hoffmaster, Jr.	W.Va.	B.S. 1942, Radford College	
A.B. 1951, Shepherd College		Edith Elizabeth Walter	Va.
Thomas Avery Jackson	Va.	A.B. 1944, Randolph-Macon Woman's	
B.S. 1951, Mississippi Southern		College	
College		Irene Bennett Young	Va.
		A.B. 1930, College of William and	
		Mary	

DOCTOR OF EDUCATION

NOVEMBER 11, 1952

Edward Kennet Foster	W.Va.	Howard Robertson Richardson	Va.
A.B. 1945, Westmont State College		A.B. 1917, Elon College	
A.M. 1949, West Virginia University		A.M. 1912, College of William and Mary	
Dissertation: "Inservice Training of Classroom Teachers"		Dissertation: "The Role of the High School Principal in Supervision"	

FEBRUARY 23, 1953

Bruce Harold Williams	Texas
B.S. 1914, Southwest Texas State Teachers College	
Ed.M. 1918, University of Texas	
Dissertation: "A Study and Analysis of the Reserve Officer Correspondence Course of the United States Navy."	

THE SCHOOL OF GOVERNMENT

BACHELOR OF ARTS IN GOVERNMENT

NOVEMBER 11, 1952

Samuel Wheeler Harrow, Jr.	Md.	Robert Vincent Head	Va.
Iowa Seymour Bernstein	N.Y.	(With distinction)	Va.
Verna Sarah Bowen	Va.	James Howard Holt	Pa.
Mrs. Walter Bronstein	D.C.	Douglas Richard Johnson	N.Y.
Neil Eric Cantor	D.C.	Cleo Franklin Layton	W.Va.
Marie Watkins Capel	Va.	Horace James Leavy	Va.
Antoinette Jeanne Chester	Calif.	Joseph William Lowe	Va.
David Olaf Cline	N.I.	Adolph Louis Marvey	D.C.
Howard Robert Copperman	Pa.	James Slagle Mills	Mo.
David Elmer Cowart	Texas	Robert Eugene Milne	Mo.
Irvin Raymond Crosley	D.C.	Walter Withrow Price, Jr.	Colo.
Richard Crumpler	N.C.	Walter Frederick Quast	N.J.
Irvin Lennox Cuellar	Texas	Harold LeRoy Robinson	Conn.
Anita Dukovich	Calif.	Richard Rueda, Jr.	Conn.
Bernard Richard Deschaine	Mich.	(With distinction)	Conn.
Richard Emmett Dowling	N.Y.	Robert Burton Rader	Conn.
Arnold William Estes	D.C.	Baudette Boardman Sanchez	Conn.
John Edward Feissner, Jr.	D.C.	Alvin Sandler	Conn.
Henry Esturge Fisher	La.	Reginald Douglas Shirley	Conn.
Richard Freeman	D.C.	Oscar William Stempson, Jr.	Va.
Ward Glenn Fulmer, Jr.	Ohio	Van Buren Summs	Mass.
Sergius Gumbel	D.C.	James Breaux Willging	
Doris Hecht Gordon	Va.	Robert Wolozin	

FEBRUARY 23, 1953

Henry Clay Anderson, Jr.	Va.	Frank Hine	Sc.
Thomas Harold Andrews, Jr.	Va.	Lawrence Hoffelins	Hawa.
Frank Melvin Arthur	Ore.	Albert Arthur Isenkel	Pa.
Carroll Wayne Austin	N.C.	Michael Thomas Katsoulis	N.Y.
Francis DeSales Baden	Md.	Morton Koenigsblatt	D.C.
Greensy James Blackburn	Va.	Ernest Manna Kouty	D.C.
Bernard Marcus Blum	Md.	Billie Kessler Lank	D.C.
John Patrick Buhay	Pa.	(With distinction)	D.C.
John Anthony Bugala	N.H.	George Mersich	D.C.
Joseph Patrick Burke	Pa.	Jack Malkin	D.C.
Arthur Keith Calver	Md.	Marion Mitchell Miller	Va.
Mark George Detweiler	Pa.	Thomas Ralph Offenbacher, Jr.	N.Y.
John Paul Dick	D.C.	Douglas Edward Palmes	Calif.
Robert Lawrence Edenbaum	D.C.	Robert Penetti	Calif.
Thomas Carl Erdberg	D.C.	Elizabeth May Papayannis	W.Va.
George Henry Felt	Pa.	Warren Robinson	Ill.
Monroe Lewis Fanger	Md.	Ronald Lee Russell	
Alexander Hazzoun	Md.	Frederick Clarence Samuelson	
Frank Gadd Hess	Md.	Kenneth Robert Samuelson	

Robert Ivar Skougaard	D C	Leo Martin Weintraub	N Y
Charles Edmund Tron	ME	Frank Edgar Weisbrod	ME
General George Watson	Va	Jack York	Ill.
Malcolm Waxman	N Y.		

Ga.	James Vincent Man noble	Va.
	Roger Arthur Martin	Md.
N.Y.	Kathleen Diana McGee	Va.
Ill.	Lewis Arthur McGee	Va.
Md.	Ann Patricia Mensch	Iowa
Pa.	Roger Hale Mink	Va.
Va.	Stanley Kenneth Mize	Calif.
	Daniel Ray Morrison	Pa.
Malaya	Robert Henry Morrison	Md.
D.C.	(Walt Morrison)	
Va.	Jesse Olin Murphy	Texas
Va.	Kenneth Joseph Nease	Mass.
	Robert John O'Brien	Va.
Calif.	Harold Walter Olin, Jr.	Calif.
N.I.	(Walt Olin)	
Pa.	Matthew Richard Pasquale	Md.
D.C.	James John Pease	Mass.
D.C.	James Montgomery Peck	Md.
Va.	Edward Thomas Peck	Fla.
Va.	George Bowler Pease	Va.
Va.	Charles John Perduoy	Ark.
N.I.	Alvin R. Pelt	Md.
Md.	James R. and Robby	Calif.
Md.	Charles Lewis Padden	Va.
Md.	William Arthur Pearson	Va.
N.Y.	Daniel S. Pennington	N.Y.
D.C.	Francis Mary Schmidt	Pa.
Md.	Thomas Lawrence Snow	N.Y.
D.C.	Freddie Stein	Fla.
Va.	Robert Tim Strickett	Va.
Mich.	Edward Sanford Sumner	N.Y.
D.C.	Robert Mary Sully Tom	Hawaii
D.C.	Harriet Aurora Thomas	Texas
Md.	Francis Walter Vought	Ala.
Ant. Tex.	Billie M. Gwynn Vuk	
Va.	Edward Lee Wilson, Jr.	Pa.
D.C.	George Wade Wilson	Md.
Va.	Anthony Yankovic	Va.
D.C.	Elizabeth Bell Zarnansky	D.C.

NOVEMBER 11, 1952

	NOVEMBER 11, 1952	
Roderick Abletton B.S. in F.S. University 1948, Georgetown	D.C.	Howard Harding Russell, Jr. A.B. 1961, University of North Dakota N Dak
Jane Elizabeth Avery A.B. in Ed. 1946, The George Washington University	III	Ashraf Hakeem Tabibi A.B. 1948, University of Kabul Afghanistan
Sylvanus Louis McLean B.S. from United States Merchant Marine Academy	Va.	Samuel Albert Walker B.S. 1928, University of Maryland Md
B.S. 1950, Georgetown University		

Maas.	FRANK CARLTON BETTON	Ga.
	AB 1900, University of Hawaii	
Pa.	AB 1901, The George Washington University	
	GRAD RUSSELL SILEX	Va.
	BRA 1910, Tulane University	

MAY 27, 1953

Lloyd Kenneth Belt	D.C.	Donald Chauncey Morales	Md.
A.B. in Govt. 1952, The George Washington University		A.B. in Govt. 1951, The George Washington University	Md.
George Jefferson Blakemore, Jr.	Pa.	Frederick Crawford Randall	D.C.
A.B. in Govt. 1949, The George Washington University		A.B. 1948, Municipal University of Omaha	Ill.
Hang Sheng Cheng	China	John Langan Reith	Va.
A.B. 1948, National Tsing Hua University		A.B. 1947, University of Wisconsin	Md.
Carl Leroy Henn, Jr.	Ohio	James Hamlin Schofield, Jr.	
B.S. 1945, Northwestern University		B.S. 1943, United States Military Academy	
M.B.A. 1947, Harvard University	D.C.	William Frederick Shaw	
Andrew Jackson		B.B.A. 1949, University of Miami	
A.B. in Govt. 1943, The George Washington University	Va.	Robert Shoateck	Va.
William Hubert Lewis		A.B. 1937, The George Washington University	
A.B. in Govt. 1951, The George Washington University	Texas	Mary Jane Taylor	
Theodore Manzano		A.B. 1950, Duke University	
A.B. 1947, University of Texas			

MASTER OF ARTS IN PUBLIC ADMINISTRATION

FEBRUARY 23, 1953

Robert Austin Garlock	N.Y.	Dana Harmon Hamblen	Tenn.
A.B. 1949, Union College		A.B. in Govt. 1949, The George Washington University	D.C.
Edwin Greiner	Va.	Marion Paul Lynch	
B.S. in S.S. 1949, College of the City of New York		A.B. in Govt. 1950, The George Washington University	

MAY 27, 1953

Robert Grant Efteland	Oreg.	Marian Olene Norby	Kans.
A.B. 1941, Stanford University		B.S. 1947, Kansas State College	Va.
Bernard Carl Eisenberg	D.C.	Carl Allen Raymond, Jr.	Ohio
A.B. 1951, The George Washington University		A.B. 1948, M.C.S. 1919, Dartmouth College	Ind.
Edwin A. Hartley	Pa.	Earl Theodore Reichert	
Ph.B. 1949, LL.B. 1949, Dickinson College		B.S. in Ed. 1949, Ohio State University	
Ana Luisa Prieto Hernández	Puerto Rico	Roger Lee Rothrock	
A.B. 1944, University of Puerto Rico		A.B. 1949, Indiana University	

MASTER OF BUSINESS ADMINISTRATION

NOVEMBER 11, 1952

Walter James Smith, Jr.	Ill.	William Sterne Williams	Md.
B.S. 1950, University of Denver		A.B. 1950, University of Utah	
Gordon Alfred Whitt			
A.B. 1949, The George Washington University			

FEBRUARY 23, 1953

Dominick Cincipini	Md.	Francis Henry Partick	Pa.
B.S. 1949, University of Pittsburgh		B.S. 1938, United States Military Academy	N.Y.
Charles Byrd Hawthorne	Va.	Dana Roland Pickup	
B.S. in Phil. 1949, The George Washington University		B.S. 1936, University of Oklahoma	

MAY 27, 1953

Frederick Carlton Brehm	Wis.	James Devitt Colquhoun	
A.B. 1948, University of Wisconsin		B.S. 1940, Franklin and Marshall College	
Galen Craig Brown	Calif.		
A.B. 1941, Whittier College			

Degrees Conferred

425

Clifton Morton Craig, Jr. B.S. 1946, University of North Carolina	N.C.	Brook Stockman Mansfield B.S. 1919, United States Naval Academy	Va.
John Hobson Davenport A.B. in Govt. 1949, The George Washington University	Va.	Troy Davis Mathis B.S. 1949, University of North Carolina	N.C.
Orville William Dryer B.S. 1940, Bowling Green State University	Ohio	Daniel Meyers A.B. in Govt. 1950, The George Washington University	N.Y.
Manuel Gilberto Garcia A.B. in Govt. 1949, The George Washington University	Md.	George Kenneth Parker A.B. 1949, Bowling Green State University	Ohio
Alfred Wiltz Gardes, Jr. B.S. 1937, United States Naval Academy	Ill.	Robert Compton Payne A.B. 1941, San Jose State College	Calif.
Jack Louis Graham A.B. 1940, Stanford University	Calif.	William Lindsay Poundexter B.S. 1940, United States Naval Academy	Md.
Robert Randall Graham, Jr. B.S. 1941, United States Naval Academy	Calif.	William Oscar Powell, Jr. B.S. 1937, University of Chattanooga	Tenn.
B.C.E. 1946, M.C.E. 1947, Rensselaer Polytechnic Institute		Harry Marvin Pugh B.S. in B.A. 1937, Ohio State University	Ohio
Elbert Dale Graves B.S. 1940, Indiana University	Ind.	Alvin Robinson B.S. 1927, United States Naval Academy	N.Y.
Thomas Gregory A.B. 1940, New York University	N.Y.	I.D. 1932, New York University	
Paul Henry Grouleff B.S. 1932, United States Naval Academy	N.J.	Joseph Ambrose Sestak B.S. 1942, United States Naval Academy	Pa.
James Langford Jordan B.S. 1931, United States Naval Academy	Calif.	N.E. 1940, Massachusetts Institute of Technology	Calif.
Herbert Vern Ladley A.B. 1941, University of Washington	Wash.	Pascual Valencia A.B. 1951, San Jose State College	Calif.
Rez Beach Little B.S. 1932, United States Naval Academy	Mo.	Dott Earl Zook, Jr. B.S. 1941, United States Naval Academy	Calif.

MASTER OF ARTS IN PERSONNEL ADMINISTRATION

NOVEMBER 11, 1952

William Charles Valdes
A.B. 1940, Yale University

Va.

FEBRUARY 23, 1953

Charles Aloysius Butler B.S. 1948, St. Peter's College	N.J.	John William Molyneaux A.B. 1939, The George Washington University	Md.
George Drexel Ish B.S. 1951, Michigan State College	Ill.	Harry John Tascaris A.B. 1940, University of Southern California	D.C.

MAY 27, 1953

Helen R. Cahill B.S. 1929, Iowa State College of Agriculture and Mechanic Arts	D.C.	Thomas Patrick McKeown A.B. 1953, The George Washington University	Mass.
Emile K. Jensen B.S. 1949, Columbia University	Md.	Sherman Harry Roberts B.S. 1951, Illinois Institute of Technology	Ill.
Mary M. Katalinich B.S. 1952, American University	Minn.	Donald Aze Spiker A.B. in Govt. 1951, The George Washington University	D.C.

COLLEGE OF GENERAL STUDIES

ASSOCIATE IN ARTS

MAY 27, 1953

Jean Baptist Louis DeBoeck
Va.

BACHELOR OF ARTS IN GENERAL STUDIES

FEBRUARY 23, 1953

Arlene Harriett Goodridge

Vi.

BACHELOR OF ARTS IN GENERAL CURRICULUM

MAY 27, 1953

James P. Knapp

N.Y.

BACHELOR OF ARTS IN BUSINESS ADMINISTRATION

MAY 27, 1953

Roland James Dixon

Va.

THE GRADUATE COUNCIL

DOCTOR OF PHILOSOPHY

NOVEMBER 11, 1952

Arthur Naeole Carson

B.S. 1944, California Institute of Technology

M.S. 1948, The George Washington University

Dissertation: "The Dynamical Evolution of a Star and a Comparative Study of Nuclear and Radiation Temperatures"

Marlin Monroe Espenbude

B.S. 1941, Lebanon Valley College

M.S. 1943, Purdue University

Dissertation: "Experimental Morphology in Peridom"

Michael Marshall Eschler

B.S. 1942, University of Massachusetts

A.M. 1947, Columbia University

M.S. 1949, University of Hawaii

Dissertation: "A Polarographic Investigation of Some Neurophysiology"

N.M.

Marvin Irving Gottlieb

A.B. 1947, New York University

M.S. 1949, The George Washington University

Dissertation: "A Morphological and Histo-Cytological Study of the Effects of Methylcholanthrene on Normal and Regenerating Limbs of *Triturus viridescens*"

Pa.

Norma Rich Metzner

A.B. 1949, University of Wisconsin

Dissertation: "The Influence of Training in Particular College Courses on Verbal and Numerical Abilities"

Mass.

John Faxon Mottley

A.B. 1940, Bridgewater College

A.M. 1948, University of Virginia

Dissertation: "An Investigation of the Background, Functions, and Attitudes of Six Groups of College Men"

FEBRUARY 23, 1953

Franklin Percell Hillman

A.B. 1946, Emory and Henry College

A.M. 1949, The George Washington University

Dissertation: "The Diplomatic Career of James Buchanan"

Stanley Morton Kutz

B.S. 1949, M.S. 1950, The George Washington University

Dissertation: "A Critical Study of the Mitochondria and Golgi Bodies in the Cells of the Kidney, Pancreas, Ovary, and Submandibular Gland of the Rat in Relation to Age"

Va.

Velva Elaine Rudd

B.S. 1951, M.S. 1952, North Dakota Agricultural College

Dissertation: "The American Species of *L. erysimi*"

Kenneth Kaname Takemoto

B.S. 1949, M.S. 1950, The George Washington University

Dissertation: "The Experimental Chemotherapy of Influenza and Herpes Simplex Viruses"

N.C.

Tex.

Md.

Va.

D.C.

Hawaii

MAY 27, 1953

Robert Henry Brownson B.S. 1946, John Carroll University M.S. 1949, The George Washington University Dissertation: "The Effects of Fatigue on the Anterior Horns of the Mouse Spinal Cord, C. ThII Level, Relative to Aging Processes"	Calif.	Melvin Harold Heffer B.S. 1944, College of William and Mary M.S. 1951, The George Washington University Dissertation: "The Influence of Acetic Acid on the Action of Adrenal Cortical Hormones in Certain Aspects of Carbohydrate Metabolism"	Va.
Glenn Marie Combs B.S. 1945, Mary Washington College M.S. 1948, The George Washington University Dissertation: "Action of Salicylates on Related Compounds on Carbohydrate Metabolism and on Adrenal Vessels and Cholesterol Concentrations"	Puerto Rico	John Paul Howe B.S. 1928, Middlebury College A.M. 1935, Columbia University Dissertation: "Enzymes and Aspects of the Biochemistry of Certain Strains of <i>Escherichia coli</i> "	Md.
Robert Maurice Conzelmann, Jr. B.S. 1949, Middle State College Dissertation: "Some Aspects of the Metabolism of Radioactively Labeled Amino Acids in <i>Escherichia coli</i> "	Calif.	Stanley Herbert Patten, Jr. B.S. 1944, M.S. 1949, The George Washington University Dissertation: "The Problem of Reproduction and Differentiation of the Internal Fertilizer"	Ohio
Becky Fay Dade A.B. 1946, Brooklyn College M.S. 1948, Columbia University Dissertation: "The Effect of Placental Anoxia and of Hypoxia on the Respiration of the Smooth Muscle Tissue of the Rabbit and of the Guinea Pig"	Va.	Mary Rose Sperry B.S. 1947, Texas State College for Women M.S. 1949, Iowa State College Dissertation: "Viscosity of the Blood in the Chick"	Texas
William M. S. Brown B.S. 1949, The George Washington University Dissertation: "Some Aspects of the Metabolism of Lactate in the Central Nervous System of the Rat"	Del.	Dale H. W. Wright B.S. 1946, Leeward College A.M. 1948, The George Washington University Dissertation: "Survival Probability"	La.

HONORARY DEGREES

NOVEMBER 11, 1952

Harry Parsons Faxon John Carroll Glover	Doctor of Science Doctor of Laws	Charles George Faxon Walter R. Faxon	Doctor of Science Doctor of Laws
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MAY 27, 1953

Filwin Warfield Broome Doctor of Laws

RECIPIENTS OF AWARDS

SCHOLARSHIPS

1952-53

- The Alpha Zeta Omega Scholarship:* Marvin Schneider
The Alumni Scholarships: George Webster Latimer, Jr., Richard Roberts, Leon Irving Salzberg
The American Foundation for Pharmaceutical Education Scholarship: James Albert Fink, Jr., (spring term)
The Byron Andrews Scholarship: Frances Chaconas
The Anna Bartsch Scholarships: Mary Blue, Kay Williams (Intern)
The Emma K. Carr Scholarships: Mitchell Blankstein, Roderick Hans Boes, Robert Dow Buzzell, Alvin Cohen, Donald Raymond Hoffeld, Georg Tennyson, Leonard Irvin Weinglass, Robert Martin Werdig, Jr., George Erhardt White, Hsin Ping Wong
The Daughters of the American Revolution Scholarship: Claudia Beechum Chapline
The Isaac Davis Scholarship: Vivian Charlotte Pear
The Charles Worthington Dorsey Memorial Scholarship: Sheldon Stanley Cohen
The School of Engineering Scholarships: James Alan Cauffman, Jeffrey Hamilton Rumbaugh, Warren Allan Russell, Gope Dwnichand Hingorani
The Robert Farnham Scholarship: Dana Marie Haas
The Elma Lewis Harvey Scholarship: Dorothy Jane Koch
The Lillie S. Hazleton Scholarship: Joan Marshall Condee
The High School Scholarships: Walter Lawrence Baumann, Carolyn Schilian Berk, Eugenia Brandenburger, Brigitte Klara Buchmann, Jean Elizabeth Carroll, Dorothy Eva Collins, Perry Leroy Dennis, Donald Scaife Detwiler, Robert Ryon Downing, Jr., Donald Clifford Eising, Thomas Albert Farley, John George Fletcher, Neil Wylie Goodsell, Philip Arthur Gragan, Gary Edward Greene, Barbara Ann Guarco, Jo Ann Henry, Monte Arnold Herman, Richard Scott Hudgins, Richard Miles Kaufman, Samuel Jay Keyser, Dorothy Irene Langdon, Esther Lerner, Steven Everett Levy, Linda Lochler, James Forbes Merow, Harold Mesirow, Dorothy Ann Miller, Judith Rochmi Moffett, Kyla Barbara Mosel, Gary Jack Nimetz, John David Oberholzer, Carol Londis Pieton, Jurgen Francis Piper, Frederic Carl Porton, Henry Augustus Renz III, Ann Madison Reid, Roy George Richmond, Marjorie Roth Russell, Ephraim Gilbert Salins, Maxine Saurel, Leon Joseph Schkolnick, Joel Selbin, Leonora Tema Shank, Beulah Shanks Parker, Walter Shropshire, Jr., Ellen Sincoff, Frank McNaulty Steadman, Jr., Jere Bart Stern, Barbara L. Stuart, Beverly Ellen Teeter, Frederick Burdett Warder, Jr., Nell Weaver, Carl Weber Wertz, Rosa Dahl Wiener, Gilda Joyce Winegard
The High School Discussion Conference Scholarships: Gayla Osma April, Norman Gary Eckard, Barbara Faith Sachs
The Kappa Alpha Theta Scholarship: Linda Lochler
The Law School Scholarships: Edna Anne Asper, Russell Edwin Carlisle (spring term), James Wesley Crowther, Richard Joseph Fay, Homer Mark Jensen, Ernest Henry Land, Ronald Earl Madsen, William Brice Smith, John Walter Vaughan (spring term)
The Eugene and Agnes E. Meyer Scholarships: Louis Leighton Clipp (spring

- term), Betty Ann Korkolis (spring term), James Dominic Lay, Gerald Ross Lynch, Phyllis Diane Mensh (spring term), Charlotte Sue Mickelson (spring term), Mary Venables Pope (spring term), Alex Rode (spring term), Richard Joseph Sincoff, Eugene Irwin Stricker (spring term), Henry Snowden Valk, Robert Van Sicker (spring term), Paula Margery Williams, Diane Corinne Wilson (spring term), Barbara Elaine Wolin, Helen Martha Zahndt (spring term).
- The A. Morehouse Scholarship:* Gary Vance Cole
- The National League of Masonic Clubs Scholarship:* George Walter Buckmaster, Jr.
- The Newspaper Scholarships:*
- The Evening Star:* William Francis Fuchs, Bernard Arthur Goodrich (spring term), Ann Mark, Ellen Powell, Alben Sapkowski
- The Washington Post:* Mary Nell Gailbreath
- The John O. Rankin Scholarship:* Charles Reed Bryant
- The Lula M. Shepard Scholarships:* Murray Louis Howder, Donald Ray Moran
- The David Spencer Scholarship:* Milbrey Estes
- The Student Activities Scholarships:* John William Adams, Claude Bo Austin, Lawrence Keith Baker, Urbino Joseph Barreira, Jack Edward Baumgartner, Edgar Joseph Beale, Carl Theodore Bodolus, Joseph Francis Boland, Thomas Constantinus Bosmans, Millard Eugene Boteler, John Daniel Buckingham, John Caldwell, Terry Wells Cannon, Edward Alexander Catino, Leonard Francis Ciemiński, Basil L. Ciriello, Frank Edward Continetti, Arch LeRoy Courtney, John Joseph Daly, George Dancu, Norbert Earl Danz, Donald Edward Deming, Philip Henri DeTurk, Walter James Devlin, Louis Pasquale DiPietro, Louis Donofrio, Jr., Norman Martin Drake, Robit Lawrence Edenbaum, James William England, Thomas Stephen Flyzik, William Raymond Fox, Donald Hayes Freas, Robert Martin Frederick, Howard Frushtick, Richard Mullen Gaskell, Richard Joseph Gaspari, Richard Sanborn Gibbs, Dick P. Giesler, Donald Robert Greene, Robert Lawrence Gribble, Robert Leonard Gutt, John Henry Hausmann, James Melwyn Hill, Jesse Oscar Hinshaw, Jr., Kenneth Hirschfeld, Hubert Jack Hoff, Drexel Hoffman, John Frank Holup, Joseph John Holup, James Oliver Ingram, Elliot Karver, Kenneth Jay Kern, John Kirelner, George John Klein, Harry Patrick Kober, Stephen Joseph Korecheck, Bernard Clement Kovach, Frank William Kovacs, Dave Logan, Paul Vincent McCormick, William Parke Mellenry, Jr., William MacMillan, James Edward Manning, Jerry Wendell Marvel, Joseph Robert Masciarelli, James Richard Matthews, Frank Douglass Morrisson, Nathan James Naddeo, William Alfred Neal, John Joseph Nedrow, Augustine Ortiz, Jr., Jerry Joseph Paparella, Robert Leslie Parkinson, Cecil Rapp Perkins, Joseph Francis Petcavich, Richard Ross Phillips, John Joseph Posta, John Stanley Prach, Jennings Randolph, Jr., Robert David Reid, Donald Francis Ring, Wayne Joseph Rinick, Marvin Rowles, John Franklin Saffer, Frederick Clarence Samuelson, Kenneth Robert Samuelson, George Edward Semkew, George Fleming Sengstack, Larry Silverman, Paul Pearce Smith, Allen Smithdeal, Alvin Lee Solomon, John Michael Stokes, Paul Bryon Stroup, Bob Lee Sturm, Robert Lawrence Sweeney, John Richard Vaile, Hugo Joseph Valdiserri, James Henry Wagner, David Louis Waldron, Stanley Walowae, William Milton Weaver, John Joseph Yednock, John James Ziamandanis
- The John Withington Scholarship:* Martha Jane Scott
- The Ellen Woodhull Scholarship:* Helen Leese Biren
- The Zonta Club Scholarship:* Polly Teed Williams
- The Seroptimist Fellowship:* Harriet Boudinot Cook

PRIZES

1952-53

- Alpha Chi Sigma Freshman Awards in Chemistry:* Arnold Benjamin Rabin
Robert Clinton Knowles, Jerome Halstead Lamm
Alpha Chi Sigma Senior Award in Chemistry: Joel Selbin
Alpha Delta Pi Award in Scholarship and Leadership: Nell Weaver
Alpha Kappa Psi Award in Commerce: Robert Dow Buzzell
Alpha Zeta Omega Award in Pharmacy: Sister Mary Mathias Zimmerman
American Institute of Chemists Award in Chemistry: Joel Selbin
Bryce Thaxter Burn Award in Organic Chemistry: Alan Mark Bernard
Martin L. Cannon Memorial Award in Pharmacy: Gust George Kosteris
Chi Omega Award in Social Sciences: Vivian Charlotte Pear
John Henry Cowles Awards in Government: Robert Dow Buzzell, Hugh Weiss
Olds, Jr.
DrWitt Clinton Croissant Award for an essay on drama or the theater: Joseph
Earl Flynn
E. K. Cutter Award in English: Andrew Thomas Alexander MacDonald
Isaac Dorris Awards in Public Speaking: Barlow Jacob Wagman, James Edward
Hagan, Barbara Cohen Wolf
Delta Zeta Award in Zoology: John George Fletcher
Ellsworth Award in Patent Law: Marvin Clarence Soffen
*Jesse Frederick Estary Award to that student who has given promise of origi-
nality, energy and ability in "forthright reporting" in student publication:* Phyllis
Valerie Hards
*Joshua Evans III Memorial Award to that man in the graduating class who has
demonstrated his signal ability in the social and political sciences and who
has given promise of the interpretation of that ability in good citizenship
among his fellows:* James Forbes Menow
Willie E. Fitch Award in Chemistry: Joel Selbin
Anne Douglas Goddard Award in American Literature: William Norman Foss
Edward Carrington Goddard Award in French: Anne Carter Russell
James Douglas Goddard Award in Pharmacy: Frederick Stephen Firehacker
Morgan Richardson Goddard Award in Commerce: Robert Dow Buzzell
Gardner G. Hubbard Memorial Award in United States History: Miss
Byers Wood
Kappa Kappa Gamma Award in Botany: Anna Aylson
*John Bell Lerner Award to that member of the graduating class of this
School with the highest scholastic standing:* John David Eason
*Mortar Board Award to the woman student in the Sophomore Class having the
scholastic standing of B or higher and the most outstanding record in ac-
tivities:* Carol Yvonne Feller
*Omicron Delta Kappa Award to that member of the Senior Class who, through-
out his course, has done the most constructive work in student activities:*
George Fleming Semstack
*John O'Brien Award to that member of the graduating class of the School of
Medicine with the highest scholastic standing:* David James Pillow
*Phi Eta Sigma Award to the beginning male student attaining the highest
scholastic average in his first full term of work:* Samuel Jay Keyser
Phi Sigma Kappa Award to the winner in a freshmen fraternal contest: Barbara
Faith Salts
*Pi Beta Phi Award to that member of the Senior Class who, throughout his
course, has done the most to promote student activities:* Amy Helene Schmitt

Psi Chi Awards in Psychology: Mary Margaret Wilkinson, Robert Clinton
Fulcher, Jr.
Ruggles Award in Mathematics: Leon Joseph Schkolnick
Sigma Kappa Award in Chemistry: Arnold Benjamin Barr
James McBride Sterrett, Jr., Award in Physics: John George Fletcher
Charles Clinton Swisher Award in Medieval History: James Arthur Robinson
Thomas F. Walsh Award for an essay in Irish History: Claude Marvin Schom-
berger
Alexander Willbourn Weddell Award for an essay on World Peace: Dinu
Alexandrescu Muresianu

STUDENT ASSISTANTS

JUNE 1, 1952 TO JUNE 1, 1953

Accounting: Constance Atkins, Hugh Michael Miller, David Justin Robertson,
Frederick Clarence Samuelson, Charles Edmund Tison
Biology: Lucille Eleanor Hoyne, George Mario Padilla, Zulma Marie Sanchez,
B.S., Robert Spiegler, Max Ludwig Weissmann
Biology: George Alexander Black, A.B., Jack Wayne Collier, Edward Walter
Jycka, B.S., John Gilbert Palmer
Business Administration: Wilbur Earle Benson, Robert Dow Buzzell, David
Murray Gillis, Thomas Burton Grady, Horace James Leavy, Daniel Meyers,
Helen Elizabeth Soulin
Chemistry: Andrew Cole, Richard Hodges Funk, David Goldberg, Marian
Moeller, Joel Selbin, Robert Gordon St. Clair
Civil Engineering: Joseph Edison Bell, Robert Samuel Burns, James Michael
Colangelo, Walter Aden Cornell, Darrell Elmer Rodgers, William Albert
Weidemeyer
Economics: Charles Raymond Howard, Eve Gorsuch Kimble, Francis Oerlein,
Rosalie Posnansky, Warren Clayton Robinson, Vivian Carmel Rosenson, Guy
Waterman
Education: Charles David Cobb, A.M., Harry Grubb Detwiler, James Carl
Messersmith, A.M.
Electrical Engineering: Robert William Green, William Klein, Michael Brandiss
Rapport, Salvatore Servidio
English: Louise McClenathan, Eileen Bridget McNally, Elizabeth Truman
Wright
Geography: Charles Edwin Hesaltine, Patricia Louise Schick, Jay Wheiden
Williams
History: Grace Lucille Borg, A.B., Harry Edward Cullen, Norman Ferris, Nancy
McCoach, Carol M. Kelligott, Beulah Raymon Shanks, Jay Wheiden Williams,
Margaret Byers Wood
Home Economics: Ruth Jean Coates, Maxine Massie
Journalism: Phyllis Valerie Harrel, Elizabeth Florence Sargby
Mechanical Engineering: Richard Edward Newman, Virgil Lewis Penn
Pharmacy: Thomas Edward Cox, Louis Harry Barker
Physics: Thomas Albert Farley, John George Fletcher, Barbara Lee Miller, John
William Savage
Physical Education for Men: Phyllis Allen, Paul James Creamer, James Edward
Glover, Robert Goldstein, Betty Hodges, Stephen Joseph Kordeck, Shirley
Patricia Reed, John Joseph Yednock
Political Science: Arthur Sparrow Banks, Eugene Joshua Becker, Audrey Ann
Groom, A.B., Thomas Bradford Happer, John Kizler, Marjory Murphy, A.B.,
Hugh Wilson Olds, Edward Jay Wilson

Psychology: Frank Cameron, A.M., Milton Cole, A.B., John Phillip Floyd, Margaret Palmer Gillies, Sylvan Lippman Goldin, Burton Kerish, A.B., Frances Pasternak, Jeanne Louise Rivoire, Harold Schiffman, Conradine Leigh Spiker

Romance Languages: Lydia Laurence Eccles

Summer Recreational Program: Ella Joan Higginson, A.B.

Sociology: Joan Ruth Bacchus

Speech: Joseph Henry Abel, Sandra Lee Kitchen, Philip Endicott Valentini

Statistics: Daniel Francis Kelly, Richard Morton Michaels, Roy George Richmond, Raymond Edward Thomas, Nancy Garrison Tucker, Faye Ziemond

Zoology: John Allen Arness, Nina Bencich, Robert Singleton Bryant, Vincent Alexander Ciaverra, Doris Sanford Hadley, Jane Lee Moffett, Luis Raul Orens

Gerald Ivan Rozansky, Helen Louise Stein, Jere Bart Stern

STUDENTS REGISTERED

SUMMER TERM 1952

FALL AND SPRING TERMS 1952-53

Aaron, Gloria Lois	A		Abnerwick, Henry Anthony	Pa.
Aaronson, Charles Martin	D.C.		B.S. 1947. A.M. 1949. The George Washington University	
A.B. 1952. The George Washington University	D.C.		Ache, Atila Franco	D.C.
Abad, Santos Jose, Jr.	Philippines		Ackerman, Attus Juanette	Tenn.
B.S. 1940. University of the Philippines			Ackerman, Clotilda D.	Va.
L.L.B. 1949. University of Santo Tomas			Ackerman, Margaret Brown	Va.
Abbot, Linda Lou	D.C.		Ackiss, Ernest Lee	D.C.
Abbot, Edith Margaret	Va.		Adams, Annabelle	Md.
Abbot, Frank LeRoy	D.C.		Adams, Barbara	Va.
A.B. 1939. Central College, Mo.			Adams, Boyce Myles	Texas
Abbot, Nancy	D.C.		Adams, Dolly	D.C.
Abbot, Robert Tucker	Md.		Adams, Freda Ellen	Va.
B.S. 1946 Harvard University			Adams, Frederick Bradfield	Va.
M.S. 1950. The George Washington University			Adams, Frederick Fowler	D.C.
Abdonore, Samuel Joseph	Mass.		B.S. 1951. The George Washington University	
Abeglen, Norma Elaine	Va.		Adams, Harlan Richard	W.Va.
B.E. 1950. National College of Education, Ill.			A.B. 1949. Shepherd College	Va.
Abel, Joseph Henry	D.C.		Adams, Hetty Beauty	Colo.
Abellon, Esther Marina	Cuba		Adams, James Canoe	Nebr.
A.B. 1951. The George Washington University			Adams, James Rowe	N.J.
Abellon, Maria Luisa	Cuba		Adams, John William	Texas
A.B. 1951. The George Washington University			Adams, Melrose Buster	Fla.
Abelson, Myron Herbert	D.C.		Adams, Nicholas Aaron	
Abend, Phillip Gary	D.C.		B.S. 1949. A.M. 1950. University of Florida	
B.S. 1951. The George Washington University			Adams, Warren Thomas	Va.
Abendachain, Patricia Ann	Va.		B.S. in C.E. 1931. Georgia School of Technology	
Abernathy, John E.	D.C.		Adams, William Rule, Jr.	Md.
Abid, George E.	Wash.		A.B. 1951. Stanford University	
Abid, Charles David	Okla.		Adamson, Ray Power	Ga.
A.B. 1952. University of Oklahoma			Addy, Mary MacLeod	Va.
Abraham, Albert Mohamed	D.C.		B.S. 1941. Wheaton College	Va.
Abraham, David	Va.		Addy Richard James	Md.
Abramovitz, Melvin	Md.		Adkins, Agnes Martin	
Abrams, Bernard Weiler	Ohio		B.S. 1946. Maryland State Teachers College, Salisbury	Va.
B.E.E. 1941. Ohio State University			Adkins, Bertrand Waldo	D.C.
Abrams, Morris Melvin	D.C.		Adkins, C. Ann	D.C.
B.S. in C.E. 1950. University of Maryland			Adler, Helen Claire	D.C.
Abrama, Yehuda Hillel	D.C.		Adrian, Donald Keith	D.C.
A.B. in Govt. 1951. The George Washington University			Agosti, Lando Elmer	Va.
Abramson, Kenneth Alan	D.C.		Agustewicz, Henry Anthony	Pa.
Albrecht, Harry Lyle	Mich.		B.S. 1947. A.M. 1949. The George Washington University	
L.L.B. 1949. University of Michigan			Ahaneen, Bahman	D.C.
A.B. 1951. Western Michigan College of Education			A.B. 1946. Teheran University	D.C.
Abramvage, Robert George	Pa.		Ahern, Frank Leo, Jr.	D.C.
Abshire, John Patten	Tenn.		B.S. in M.E. 1944. Cornell University	
A.B. 1947. University of Chattanooga			Ahern, John Francis	Pa.
L.L.B. 1940. Vanderbilt University			B.S. 1946. Lehigh University	D.C.
Abushady, Safeya	N.Y.		Ahlberg, Richard Charles	
			A.B. 1947. Wesleyan University	
			A.M. 1948. Columbia University	
			Ahlfield, George Samuel	Ill.
			Ahmea, Ahmad	D.C.
			Ahrens, Gerd Hans	D.C.
			Akerman, Robert Howard	Fla.
			A.B. 1950. Rollins College	D.C.
			Albamonte, Eugene	

Alberghini, Thomas Joseph	Md.	Allen, Layne Davis	Va.
B.S. 1943. College of the Holy Cross		A.B. 1924. University of Richmond	
B.S. 1952. The George Washington University		A.M. 1940. The George Washington University	D.C.
Albert, Alfred Loba	D.C.	Allen, Louis Anderson	
Albert, Daniel	D.C.	B.S. 1951. Iowa State College of Agriculture and Mechanic Arts	Va.
Albert, Harold Franklin	Pa.	Allen, Mabel Randolph	
B.S. 1950. Muhlenberg College		A.B. 1924. University of Richmond	
Albert, Marjorie Florence	D.C.	A.M. 1940. The George Washington University	N.C.
Albright, Caridad Carballo	Dominican Republic	Allen, Mary Alice	Va.
Alden, Robert Ames	Ohio	Allen, Phyllis Johnson	D.C.
Alderman, Joseph	Va.	Allen, Richard Hunter	Md.
Alderson, Wilbur Stanley	Md.	Allen, Robert Brooke	
Alderton, David Lee	D.C.	A.B. 1951. The George Washington University	Va.
Alderton, Roderick	D.C.	Allen, Scott	Va.
Alkhizer, Carthon Evans	Va.	Allen, Thomas	Va.
Alch, Faquir Nabi	Afghanistan	Allen, Thomas Howard	Maine
LL.B. 1940. University of Kabul		Allen, Thorvald Christensen	
Alexander, Aaron David	D.C.	B.S. 1948. Cornell University	
B.S. 1948. College of the City of New York		B.S. 1951. Massachusetts State College	Va.
Alexander, Charles Patrick	Colo.	Allenworth, Rebecca Louise	D.C.
A.B. 1950. University of Denver		Allen, Harris Coles Jr.	
Alexander, David Ord	D.C.	Allex, Victor	
Alexander, Donald Paul	Va.	A.B. 1950. The George Washington University	Va.
Alexander, Eddie Jean	D.C.	Allev, Barbara Mae	Md.
Alexander, Harold Bell	Md.	Allinger, Dorothy Ann	
Alexander, Howard Newman	Wash.	A.B. 1951. The George Washington University	Ge.
A.B. 1946. University of Washington		Allison, Julia Carolyn	Md.
Alexander, Katherine Hamlin	R.I.	A.B. 1942. University of Georgia	N.Y.
Alexander, Mae Belva	Calif.	Allshouse, William Charles	D.C.
Alexander, Robert Theodore	Ohio	Alltmont, Rene Charles	N.Y.
B.S. in Eng. 1931. U.S. Coast Guard Academy		Allvin, Paul Edward	D.C.
M.S. 1940. University of Michigan		Almeida, Virgil Anthony	
Alexander, Ronald McKenzie	Md.	Almond, Hy	Md.
A.B. 1951. The George Washington University		B.S. 1948. University of Chicago	Pa.
Alexander, Roy L., Jr.	N.J.	Almy, Helen	D.C.
A.B. 1948. Duke University		Aloi, Ralph Edward	Va.
A.M. 1951. The George Washington University		Alpher, Norman Stanley	Md.
Alexander, Thomas Goodwin	Va.	Alspaugh, Clarence Henry, Jr.	D.C.
B.S. 1950. University of Maryland		Alstadter, David	Va.
Alexion, John Hosea	D.C.	Alterman, Toby Thelma	D.C.
Allan, Willard	Colo.	Althoff, William Thomas	Conn.
A.B. and A.M. 1948. Harvard University		Altman, Ruben	
Allen, Albert Conner	D.C.	Altschuler, Morton	
Allen, Alice Edwina	D.C.	Altzuler, Norman	
Allen, Alvah David	D.C.	B.S. 1950. M.S. 1951. The George Washington University	D.C.
Allen, Donna Lee	D.C.	Alvord, Laura Wales	Md.
Allen, Edward Clayton	Md.	Amaral, Ivo Magalhães	Calif.
A.B. 1940. Gettysburg College		Ambrose, Shirley Lee	Va.
Allen, Eileen Annette	Va.	Ambrosio, William	Utah
A.B. 1948. University of Maryland		Amdahl, Olaf K.	D.C.
A.M. 1947. The George Washington University		Ames, Barbara Anne	N.Y.
Allen, Elizabeth Joyce	N.Y.	Ames, Katherine	
Allen, Iola Meeker	Va.	Ames, Phyllis Clare	
Allen, James Morton	Va.	Ames, Walter Donald	D.C.
LL.B. 1950. American University		B.S. 1945. Pennsylvania State College	
Allen, Johanna R.	Ill.	Amiri, Mohammad Azim	W.Va.
Allen, John Edward	Fla.	A.B. 1950. University of Kabul	
LL.B. 1950. University of Florida		Ammar, George Joseph	Va.
Allen, Julius W.	Md.	A.B. 1952. Morris Harvey College	Ge.
B.S. 1917. Iowa State College of Agriculture and Mechanic Arts		Ammon, Clifford Venlou	
A.M. 1940. American University		Amos, Eugene Mac	D.C.
Allen, LaVerne	Ill.	LL.B. 1942. Mercer University	
		Amos, Iris Elizabeth	Md.
		A.B. 1940. Western Maryland College	
		Amos, Winifred Miles	
		A.B. 1947. Goucher College	

Ardanuy, Joachim Manuel	N.Y.	Ashworth, Charles Raymond	Idaho
Argerakis, Alex Nicholas	Md.	Asimenios, Mike	Md.
Argo, Ellen June	Md.	Asp, Tauno Ilmari	Finland
Argov, Shlomo	Israel	A.M. 1947, University of Helsinki	Pa
Argyropoulos, Demetre Archia	D.C.	Asper, Edna Anne	D.C.
Aries, Leonard Phillip	Ill.	A.B. 1950, University of Pittsburgh	Pa.
Ph.B. 1950, J.D. 1955, University of Chicago		Astafiev, Yuri Alexandrovich	D.C.
Arkin, Zenda Lillian Lieberman	Va.	Astle, Dale	Calif.
A.B. 1958, LL.B. 1940, Ohio State University		Astvazaturov, Vadim	D.C.
Arlotta, Russel Anthony	N.Y.	Atcheson, George	Md.
Armbruster, Francis Edward	Pa.	Atchison, William Preston	Id.
A.B. 1948, The George Washington University		Atkins, Constance	Va.
Armbruster, Irene C.	Va.	Atkins, Craig Starbuck, Jr.	
Armentrout, Russell Hull, Jr.	Md.	Atkins, John Dillard, Jr.	
Armora, Jack E.	N.Y.	B.S. 1940, North Carolina State Teachers College	
B.S. 1956, Brooklyn College		A.M. in Ed. 1949, The George Washington University	N.Y.
Armstrong, Betty Anne	Ohio	Atkinson, Mary Ann	D.C.
Armstrong, Edith Leeds, Jr.	N.J.	A.B. 1952, Smith College	D.C.
Armstrong, Frances Elizabeth	Mo.	Atkinson, William	D.C.
Armstrong, Mary Emma	Md.	Atlas, Alvin Simon	D.C.
A.B. 1947, Oberlin College		Atles, Patricia Anne	D.C.
Armstrong, Mary Jane M.	D.C.	Audia, William Vincent	N.Y.
Armstrong, Mary Warwick	N.Y.	Auerbach, Jack	D.C.
A.B. 1955, Mount Holyoke College		Aug, Alice Theresa	
Armstrong, Richard Merrill	Idaho	Augur, Carol	Va.
B.S. 1950, University of Idaho		A.B. 1952, University of Tennessee	N.C.
Arnald, Rosalie Bryant	Md.	Auman, Anne Nichols	D.C.
Arndt, Shirley Anne	Va.	Austin, Carroll Wayne	Va.
Arner, Frederick Bates	D.C.	Austin, Claude Allen	N.J.
A.B. 1943, Kenyon College		Austin, Edwin Cogswell	Ariz.
Arness, John Allan	Va.	Austin, George Kenneth	
Arnold, Beverly Drue	Va.	Austin, James Albert	
Arnold, Marietta Fruit	Va.	A.B. 1952, University of Southern California	Va.
Arntz, Julian Foster	D.C.	Austin, John Monroe	
A.B. 1951, University of California		Austin, Maude Savage	
Aronson, Gerald Roy	D.C.	B.S. 1940, Maryland State Teachers College	Pa.
Arret, Bernard	Md.	Austin, Robert Earl	
B.S. 1941, College of the City of New York		B.B. in E.E. 1950, Pennsylvania State Teachers College	Md.
Arrington, Claudio Edward	D.C.	Avanzini, Elsa	Mass.
Arsenault, Roderick Allan	D.C.	Avellar, Karl B.	Maine
Arseneau, Paul Florian	D.C.	Avery, Gordon Bennett	Va.
B.E.E. 1950, Marquette University		Avery, Halburton Lockie	
M.S. in E.E. 1951, Harvard University		Avey, John Jacob, Jr.	Fla.
Arshawsky, Frank	D.C.	B.S. 1949, Lehigh University	
Arthur, Constance Clarke	N.Y.	Avin, Martin	
Arthur, Frank Melvin	Va.	B.S. 1934, Brooklyn College	Fla.
Arthur, Howard Edgar	D.C.	LL.B. 1937, Harvard University	Md.
Arthur, John Joseph	D.C.	Awtry, James Dewey	
A.B. 1943, The George Washington University		Axilrod, Katherine Podolsky	
Arthur, Norma M.	N.Y.	Ph.B. 1946, A.M. 1950, University of Chicago	Idaho
B.S. 1945, Syracuse University		Ayapa, Cheeryakapuvanda Bhimsaya	D.C.
Arveson, Maude Eleanor	Wis.	Aylaian, Anna	Pa.
A.B. and B.S. 1925, Lindenwood College		Aylaian, Arsen	
A.M. 1941, Columbia University		Aylward, Theodore Charles	Alghaniata
Ashby, Don	Calif.	B.S. 1926, U. S. Naval Academy	D.C.
A.B. 1941, State University of Iowa		Azad, Abdul Khaliq	
Ashby, Kenner Smith	Md.	Aziz, Abdul Kadir	
Ashby, Wallace Little	Va.	B.S. 1953, Wilson Teachers College	
A.B. 1947, The George Washington University			B
Ashby, Ray Lester	Va.	Babcock, Penelope Lippitt	Md.
Ashby, T. JoAnne	D.C.	Babcock, Robert Lloyd	Va.
Ashford, William Henry, Jr.	Ga.	Baber, Kenneth Dale	Oriz.
B.S. 1927, U. S. Naval Academy		B.S. 1950, Oregon State College	D.C.
Ashley, George Milton III	D.C.	Babst, Peggy Stamatini	D.C.
Ashour, Geraldine Ramona	Mo.	Babigan, Janet Ruth	
Ashton, Fleming	Va.		

Babinski, Matthew U.S. 1949, Worcester Polytechnic Institute	Va.	Baker, Donald P.	W.Va.
Babione, Margery May		Baker, E. Neil	N.J.
Babione, Robert John	Va.	Baker, Edward Welch	D.C.
Bacak, Joseph John	Va.	A.B. in Ed. 1952, The George Washington University	
Bacchus, Habeeb B.S. 1947, Howard University	Ohio	Baker, Gordon	N.J.
M.S. 1948, Ph.D. 1950, The George Washington University	D.C.	Baker, Harold Leon	Tenn.
Bacchus, Joan Ruth		Baker, Kenneth Bartaine	Pa.
Bacchus, Mary Dean	Md.	Baker, Lawrence Keith	Va.
A.M. 1951, Columbia University	Ala.	Baker, Marcia Jane	Va.
Bachman, Barbara		A.B. 1946, The George Washington University	
Bachkauskas, Theodore Herbert	Va.	Baker, Marvin Claude, Jr.	Ala.
Bachus, Edith Gisela	D.C.	Baker, Mildred	S.C.
Bacon, John William	D.C.	Baker, Robert Ellerson Francis	Va.
B.S. 1950, Cornell University	N.Y.	Baker, Thomas Glenn	Md.
Baden, Francis DeSales		Baker, Virginia Marie	Va.
Badger, Harry Peaslee	Md.	A.B. 1944, The George Washington University	
B.S. 1949, U.S. Naval Academy	N.Y.	A.M. 1948, Johns Hopkins University	Pa.
Baer, Frederick Norman	Ohio	Baker, Waldon Lee	Md.
Ph.B. 1949, Notre Dame University		Baker, Warren Stanton	
Baer, James Irving		B.S. 1952, University of Maryland	D.C.
Bagan, Michael	Md.	Baker, William Clinton	
Baldon, Vincent Joseph	N.Y.	A.B. 1949, A.M. 1950, The George Washington University	
Baerett, Effie Jewell	Mich.	Bakon, Frederick Joseph	Mass.
A.B. 1941, Southwestern University	Texas	Bahr, Huda	D.C.
A.M. 1941, Texas University		Baldau, John Augustine, Jr.	Pa.
B.S. 1945, Columbia University		Baldock, George Owen	Ill.
Barley, Edward Joseph	N.Y.	Baldwin, Alice Murrel	D.C.
Barley, Floyd Caldwell	R.I.	Baldwin, Anne May	D.C.
Barwell, Carlos Daniel Thomas	Md.	Baldwin, Don Mervin	Mich.
A.B. 1947, Ohio Northern University	D.C.	Baldwin, Edward Franklin	Texas
A.M. 1948, Ohio State University		Baldwin, Ernest Grant	D.C.
Bahr, Clarence Leo, Jr.		B.S. 1942, Trinity College	
B.S. Robert Dennis	D.C.	Baldwin, Franklin Hunter	Va.
B.S. 1950, University of Wisconsin	Va.	Baldwin, James Leon	Wis.
Baier, Frederick Lawrence	N.J.	Balen, Harley Pat	Ariz.
Bailey, Aubrey William	Md.	A.B. 1951, Arizona State College, Tempe	
Bailey, Barbara Adair	Va.	Balestracci, Mary Eleanor	Mass.
Bailey, Helen May	Calif.	Ball, Joseph James	Md.
A.B. 1944, University of Southern California		Ballard, Jennings Fletcher	Md.
Bailey, James Edwin	Minn.	A.B. 1942, East Carolina Teachers College	
B.S. 1941, Duluth State Teachers College		A.M. 1947, Columbia University	W.Va.
Bailey, Joseph Fortune	Tenn.	Ballengee, Paul Richard	
Bailey, Leslie Fidel	Mich.	B.S. 1940, West Virginia Institute of Technology	Fla.
A.B. 1944, University of Michigan		Ball, Carl Eugene	
Bailey, Margaret Evelyn	Va.	A.B. 1950, The George Washington University	
B.S. 1949, University of Minnesota	Minn.	Ballinger, John Montgomery	Texas
Bailey, Nancy Hamilton		B.S. 1947, U.S. Naval Academy	
B.S. 1946, West Virginia University	D.C.	M.S. 1941, Michigan Institute of Technology	
Bailey, Ralph Jr.	S.C.	Ballmann, Francis Xavier	D.C.
LL.B. 1948, The Citadel		B.S. 1940, Georgetown University	D.C.
LL.B. 1950, University of South Carolina		Balogh, Agnes Margaret	Md.
Bailey, Wilma Alertha	Pa.	Balogh, James Jr.	D.C.
B.S. 1944, Pennsylvania State Teachers College, California		Balahaw, Marie Elizabeth	Ill.
Baile, Susannah Conklin	Conn.	Balster, Vernon Henry	
A.B. 1950, Cornell University		A.B. 1947, Concord Seminary	N.H.
Bain, Harold Emerson	Ala.	Balkevich, James Joseph	Ind.
B.S. 1952, University of Alabama		Balzer, Clayton Paul	R.I.
Baker, Aslie Page, Jr.	Md.	Bamber, Richard Camille	D.C.
B.S. 1951, University of Maryland		Bamberger, Fred Hans	
Baker, Carl Wilfred	D.C.	LL.B. 1927 LL.M., J.U.D. 1934, University of Heidelberg	Md.
B.S. 1948, Ohio State University	D.C.	Bamhart, C. Paul	
Baker, Carolyn Purdy		A.B. 1950, Lebanon Valley College	
		M.Ed. 1941, University of Maryland	

Bancroft, Raymond Lowell	D.C.	Barlow, Bill Ray	Ohio
Band, Bernard Alvin	D.C.	Barlow, Shirley	Mass.
Band, Marlene Eunice	D.C.	Barnard, George Arthur	N.Y.
Bandy, Alva Harlan	Kans.	Barnard, Leroy Hanson, Jr.	Va.
B.S. 1947, Kansas State College		Barnard, Louie Woodrow	Ill.
LL.B. 1949, Washburn Municipal		Barnard, Ralph Roger	D.C.
University of Topeka		B.E.E. 1949, Cornell University	Md.
LL.M. 1951, The George Washington		Barnes, Ada	
University		Barnes, Eugenia Hancock	
Bangert, Richard Hugh	D.C.	Barnes, Howard Emerson	Va.
Banko, Andrew	Pa.	B.S.E. 1935, University of Florida	N.C.
Bankovsky, Nicholas Peter	Pa.	Barnes, Joanne Louise	D.C.
B.S. 1941, New York University		Barnes, Kenneth Clark	Md.
Banks, Arthur Sparrow	D.C.	Barnes, Raymond Van Dyck	
A.B. 1951, Cornell University		Barnes, Robert Dean	Calif.
Banks, Minnie	D.C.	B.S. 1949, University of Missouri	
B.S. in Ed. 1916, Madison College		Barnett, Charles Maxwell	D.C.
A.M. in Ed. 1947, The George		A.B. in Govt. 1950, The George	
Washington University		Washington University	
Bankson, Albert Peter	Calif.	Barnett, Maria	
Bannerman, Benny Levi	Va.	Barnes, Shirley Isabel	Md.
B.S. 1951, Richmond Professional		B.S. in Ed. 1942, University of	
Institute		Vermont	
Banning, Bruce Cramer	Md.	Barnhart, James Dale	D.C.
B.S. 1952, Georgetown University		Barnhart, Arthur Gooding	
Baptiste, Mary	Miss.	A.B. 1949, The George Washington	
Baqai, Mazhar Uddin	D.C.	University	
A.M. 1940, University of Delhi,		Barnhill, Nelle Inman	Ohio
India		Barnhouse, Harry Robert	Va.
Barakat-Kazem, Hassan	D.C.	Barnhouse, Darwin Collier	N.H.
Baratta, Michael Vincent	N.Y.	Baroody, Theodore Joseph	D.C.
B.S. 1940, Columbia University		Barr, Allen Wieler	
Barbee, Ruth Stone	Md.	B.S. 1951, American University	
Barbee, William Clifford	Va.	Barr, Arnold Benjamin	Texas
A.B. 1950, The George Washington		Barr, Brady Garland	
University		Barr, David	Md.
Barber, Alvin Thomas	Pa.	Barr, Grace Booker	
B.S. 1911, Susquehanna University		Barr, John L. Jr.	
Barber, Herbert Lufonso	Texas	A.B. 1939, Harvard University	
B.S. 1941, East Texas State Teachers		LL.B. 1947, The George Washington	
College		University	
A.M. 1948, Texas Christian		Barr, Marie Ann	Pa.
University		Barr, Robert McKeage	Pa.
Barber, Lloyd Morris	Ala.	Barr, Ruth Elizabeth	
Barber, Mary Alice	Okla.	B.S. 1947, Drexel Institute of	D.C.
Barclay, Thomas Dukey	Va.	Technology	
Barclay, Robert Tate	Md.	Barr, Solomon Elfreem	
B.S. 1945, California Institute of		A.B. 1951, The George Washington	
Technology		University	
Barden, Charles Stanford	D.C.	Barranco, Frank Thomas	Md.
A.B. 1959, Duke University		A.B. 1952, Duke University	Mass.
Barefolsky, Frances	D.C.	Barranger, John Paul	D.C.
A.B. 1948, The George Washington		Barrera, Urbino Joseph	
University		Bassett, Annabel Lambert	
Barga, Jack Lee	Ohio	A.B. 1947, Barnard College	
Barger, Herman Haroldye	Va.	A.M. in Ed. 1951, The George	
A.B. 1917, Harvard University		Washington University	Mass.
Barges, Alexander	Calif.	Barrett, Arthur Jenkins, Jr.	D.C.
Barish, Richard Fowler	Va.	B.S. 1939, U.S. Naval Academy	
Barndon, Richard Gene	D.C.	Barrett, Florence Catherine	D.C.
Barsha, Joseph	D.C.	Barrett, James Francis	
Barker, Elsie D.	N.Y.	Barrett, John Cornelius	D.C.
Barker, Nancy Louise	MJ	Barrett, John William	
Barker, Rachel Marion	Vt.	Barrett, Mary Louisa	Md.
A.B. 1945, Bennington College		Barrett, Vivienne Hollislee	D.C.
A.M. 1949, Smith College		Barnick, Donald Michael	Texas
Barker, Robert Marvin	Va.	Barron, Charlie Nelma	
Barkun, Gilbert Donald	D.C.	D.V.M. 1943, M.S. 1950, Texas	
B.S. 1940, The George Washington		Agricultural and Mechanical College	D.C.
University		Barron, Edward Ward	Md.
Barkley, Anne Marie	Md.	Barrow, Samuel Wheeler	Va.
A.B. 1947, New York University		Barry, Robert Kegan	
A.M. 1942, Columbia University			
Barley, Martin Alan	D.C.		

Students Registered

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Barsamian, Walter A.B. 1951, Brown University	R.I.	Baummann, Robert Coile	Va.
Barsamian, Flora Marie A.B. 1950, The George Washington University	Va.	Baummann, Shirley Mae A.B. 1951, University of Maryland	Md.
Bartlett, Gail Treat A.B. 1948, Syracuse University	D.C.	Baummann, Walter Lawrence A.B. 1927, University of North Carolina	D.C.
Barton, Howard J.D. 1951, Northwestern University	D.C.	Baumgart, John Keppler A.M. 1939, University of Michigan	Ill.
Barton, Robert Wharton B.S. 1952, Wilson Teachers College	N.H.	Baumgartner, Jack Edward Bauerman, Hilda Marie	Va.
Barton, Thomas Edward B.S. 1949, University of Maryland	D.C.	B.S. 1951, Longwood College	Va.
Barton, Victor Ewing Bates, Josephine Teresa	Va.	Baute, Eloise Dorothy	Mo.
Bartowski, Florence Battach, John Edward, Jr.	Pa.	Baxley, Riley Morrison	D.C.
Battach, William Henry Baruchin, Belle	Ohio	Baxter, Charles Sayre, Jr.	D.C.
Barnick, James Henry, Jr. Barnick, Joel Richard	Pa.	Baxter, David Louis A.B. 1937, St. John's University, N. Y.	Md.
A.B. in Govt. 1950, The George Washington University	D.C.	Bayer, Frederick Merkle B.S. 1948, University of Miami	Fla.
Barr, Valut	D.C.	Bayer, Ralph Robertson B.S. 1935, Ohio State University	Ohio
Barram, Anne Layton Barrere, Richard, Albert	Va.	Bayles, Barney Elshia Baylies, Solfrons Fielding	Md.
A.B. 1951, University of California	D.C.	Bayliff, Calvin Orman Baylinton, Richard Norman	Md.
Battle, Anthony Stephen Baska, John Wilson	Md.	Baylor, Warner Lewis	N.J.
B.S. 1949, Kansas State College	Kans.	Bayon, Harry	Va.
Baskett, Thomas Slack B.S. 1945, U.S. Naval Academy	D.C.	Bays, Billy Edward A.B. 1952, Marshall College	W.Va.
Bass, Earl Jay A.B. 1950, Catholic University of America	Md.	Beach, David Jerome Beach, Lillian Estelle	D.C.
Battacky, Stanley Norman A.B. 1951, University of Pittsburgh	Pa.	B.S. 1941, Longwood College	Va.
Battian, James Harold B.S. 1950, University of Missouri	Mo.	Beacham, Samuel Timothy, Jr. A.B. in Govt. 1951, The George Washington University	D.C.
Bath, William Joseph Bathelder, John Gardner	Va.	Beard, James Ralph B.S. 1949, L.L.B. 1951, University of Alabama	Ala.
B.S. 1950, University of New Hampshire	N.H.	Beale, Edgar Joseph	Ky.
Bathelder, JuneDean M. Batchelor, Alonzo William	D.C.	Beale, John L. Beale, Thomas William, Jr.	D.C.
Bateman, Herbert DeVerno B.S. in M.E. 1951, University of Chicago	N.Y.	Beamer, Alan Leroy B.S. 1946, Pennsylvania State Teachers College, California	Ky.
Bateman, William Raphael A.B. 1952, The George Washington University	Mich.	Bean, Keith Roger B.S. 1951, University of Utah	Va.
Bates, Dorothy May A.B. 1947, Western State Teachers College	D.C.	Bear, Elwood Leroy, Jr. Bear, Frederick James	Mich.
Bates, George Marshall B.S. 1948, U.S. Naval Academy	Ky.	Beard, Barbara Markham B.S. 1950, Richmond Professional Institute	Va.
Bates, Richard Sims Barbary, Hildegarde Halstead	Tenn.	Beardley, James Henry Beary, Franklin David	Md.
Barton, Kenneth T. B.S. 1940, The George Washington University	D.C.	B.S. in E.E. 1941, Duke University	Va.
Batson, Russell Dean Battaglia, Doris Eleanor	D.C.	Beasley, Derwood Marice Beasley, Edward Evans	Texas
B.S. 1952, University of Florida	Va.	B.S. 1944, U.S. Naval Academy	Wash.
Battley, Victor, Jr. Battin, Avis Forand	N.Y.	Beatley, Paul Frederick Beatty, Edward Smith	Fla.
Battin, Floyd Morley B.S. 1951, Lebanon Valley College	Calif.	Beatty, Edwin L. Beatty, Eleanor	Pa.
Battin, Richard Harvey Bauer, Eleanor Frances	Va.	A.B. 1941, Bryn Mawr College	D.C.
Baugham, Luther Kyle Bauk, Stephen	Md.	Beatty, George Calvin Beatty, Sara	Va.
Baum, Richard Allen	N.Y.	Beauchamp, Gerson Eli A.B. 1951, University of Puerto Rico	D.C.
	D.C.	Beauchamp, Martha Hawkins Beaulieu, Harry Arthur	D.C.
	D.C.	B.S. 1950, Ithaca College	D.C.
	D.C.	Beaulieu, Louis James	Maine
	D.C.	Beaumont, Katherine E.	D.C.
	D.C.	Beauregard, Joseph Roger A.B. 1952, University of Vermont	Va.

Beauregard, Raymond Louis	Vt.	Behrens, Elsa Beatrice	Vt.
Beaver, Carol Westbrook	D.C.	Behrens, Nicholas Theodore	D.C.
Beavers, Virginia Lee	D.C.	Behrman, Mohamad	D.C.
Beazley, Charles Paskel	Va.	Bein, Robert	Mo.
Bebar, Arthur Maurice	Md.	Bessel, Edward Lincoln	D.C.
Bechtoldt, Cletus Joseph	Ill.	Beizens, Hirsuta Elvira	Mass.
B.S. 1950, The George Washington University		Belanger, Robert Joseph	Ky.
Bechtolt, Nancy Carpenter	Va.	Belcher, Carl William	
A.B. 1948, University of Chicago		A.B. 1948, Duke University	
Beck, Anna Catherine	Md.	L.L.B. 1952, The George Washington University	Mass.
Beck, Audrey Phillips	Va.	Belcher, Hilda Barnes	N.Y.
Beck, Donald Michael	Va.	A.B. 1950, Mount Holyoke College	
Beck, Harold Russell	Ohio	Beldock, Myron	Va.
B.S. 1951, Case Institute of Technology		A.B. 1950, Hamilton College	N.Y.
Beck, Hugo Michael	D.C.	Belknap, Gerald Andrew	
B.S. 1951, The George Washington University		Belkin, Leonard	D.C.
Beck, Kathleen Dorothy	N.Y.	B.E.M.E. 1950, Cooper Union	
A.B. 1950, St. Joseph's Seminary and College		Bell, Clifton	
Becke, Edward G.	D.C.	B.S. 1924, Oklahoma Agricultural and Mechanical College	Va.
Becker, Alethia Ann	D.C.	Bell, Colley Wood, Jr.	Ill.
Becker, Arlene Berlin	Va.	A.B. 1947, Princeton University	Ill.
A.B. 1948, The George Washington University		Bell, Earl Charles	
Becker, Donald Paul	Pa.	Bell, Elliot	Md.
Becker, Eugene Joshua	N.Y.	B.S. in E.E. 1951, University of Illinois	
A.B. 1951, The George Washington University		Bell, Frances Louise	Va.
Becker, Joseph	D.C.	B.S. 1937, University of Alabama	
A.B. 1950, A.M. 1952, The George Washington University		Bell, Howard Hughes	Fla.
Becker, Mary Cathoon	Md.	B.J. 1948, University of Missouri	
A.B. 1941, Vassar College		Bell, Iris Yvonne	Va.
Beckett, William Wade	Fla.	A.B. 1940, Florida State University	Va.
B.S. in C.E. 1944, The Citadel		L.L.B. 1948, The George Washington University	Md.
Beckett, William Wells	Md.	Bell, James Herbert	Md.
Beckh, Lucette Marie Luise	D.C.	Bell, Joseph Edison	D.C.
Beckler, Caroline Pollard	Canada	Bell, William Salisbury	Ohio
A.B. 1951, University of Maine		Bellak, Joseph Michael	
Beckler, Margaret Alma	Ind.	Bellamy, William Edward	
Beckler, Seymour	D.C.	A.B. 1941, The George Washington University	N.H.
Beckman, Seymour Ames	N.Y.	Bellavance, Roland Gregory	D.C.
Beckman, Victor Rudolph	Md.	Beller, Catherine Marie	Md.
B.S. in E.E. 1952, University of Wisconsin		Beller, Margaret Anne	Md.
Beckwith, Marion Casey	Md.	Bellinger, Edgar Thomson	D.C.
A.B. in Ed. 1948, Rhode Island College of Education		A.B. 1951, Haverford College	D.C.
A.M. in Ed. 1951, The George Washington University		Bellucci, Vince	
Beckwith, Harnet	Fla.	Belt, Charles Vernon	
A.B. 1948, The George Washington University		Belt, Lloyd Kenneth	
Bedford, Valerie Lorraine	D.C.	A.B. 1952, The George Washington University	Md.
Bedo, Alexander Kalouki	Md.	Beltz, Ross Eugene	Va.
D.I.S. 1950, University of Budapest		Bement, George Jr.	D.C.
Beebe, Allen Richard	Del.	Bemich, Nina Libertas	Tenn.
A.B. 1951, Princeton University		Bender, Diane Edwin	D.C.
Beerman, Ruth	Iowa	Bemler, Donald Valentine	N.Y.
Beers, John Sturges	D.C.	Benedict, Thomas Reilly	D.C.
Beese, Edward Thomas	Conn.	Benson, Gertrud Adeline	Va.
Belachina, Mary Christoph	D.C.	Bennett, Barbara Louise	
Begony, Margaret	Pa.	Benner, Anita Pepmeier	
Bene, Eui Kook, Jr.	Conn.	B.S. in Ed. 1940, Mary Washington College	
A.B. 1949, Wesleyan University		A.M. in Ed. 1946, The George Washington University	Va.
B.S. 1950, U. S. Merchant Marine Academy		Bennett, Daniel Arthur	
Bernicke, Annette Dings	D.C.	M.F. 1929, Stevens Institute of Technology	
A.B. 1951, Dunbarton College		L.L.B. 1954, J.S.D. 1956, Brooklyn Law School	D.C.
Behrens, Charles Donald	Mont.	L.L.B. 1917, Dallas Law School	Pa.
A.B. 1950, Montana State University		Bennett, Paul Philemon	D.C.
		Bennett, Richard Lee	
		Bennett, Willard Harrison, Jr.	

Students Registered

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Bennett, William Batchelder B.S. 1946, University of New Hampshire AM 1950, Ph.D. 1941, Louisiana State University	Va.	Berman, Melvin John Berman, Stanford Warner B.S. in M.E. 1950, University of Maryland	D.C. D.C.
Benoit, Harry, Jr. B.S. 1948, U. S. Naval Academy	Idaho	Berman, Stashia Bernard, George Vincent A.B. 1949, Lynchburg College	D.C. Va.
Benson, Katharine Connet Benson, Robert Lynn Benson, Robert Roy B.S. 1951, University of Virginia AM 1952, The George Washington University	Va. Va. Ind.	Bernard, Joseph Alfred Bernard, Kenneth B.S. 1947, Massachusetts Institute of Technology	Va. Fla.
Benson, Wilbur Earle A.B. 1951, A.M. 1952, The George Washington University	D.C.	Berner, Paul Joseph B.S. 1950, Pennsylvania State College	Md.
Bentall, Murray Watson Bentley, Shirley Faye Berardo, Roland Almond John B.S. 1952, American University	D.C. Va. R.I.	Bernhardt, Max Gubiner Bernick, Lewis A.B. 1949, Oberlin College	Md. Ohio
Berchman, George Vernon Berchman, Nellie M. Berchman, Phyllis Angela Berg, Grace Lucile A.B. 1949, University of Alaska	N.Y. D.C. Ill. Alaska	Bernot, Joseph John B.S. 1951, The George Washington University	Conn. D.C.
Berg, Irvine A.B. 1950, University of Massachusetts AM 1951, Boston University	Mass.	Bernstein, Alan Socks A.B. 1950, University of Maryland	D.C.
Berg, Karl Joseph A.B. in Govt. 1950, The George Washington University	D.C.	Bernstein, Marcella B.S. 1949, Johns Hopkins University AM 1949, American University	D.C.
Berg, Louella Miller A.B. 1950, The George Washington University	Calif.	Bernstein, Maurice Saul B.S. 1947, Massachusetts Institute of Technology	Mass.
Berg, Martin Donald Berg, Murray Berg, Richard Minger A.B. 1951, Rice Institute	D.C. D.C. D.C.	Bernstein, Miriam Hannah A.B. 1949, Mount Holyoke College	N.Y.
Berg, Clair B.S. in Ed. 1950, Wilson Teachers College	D.C.	Bernstein, Philip B.S. 1952, University of Maryland	D.C.
Berg, Florence Bernice A.B. 1952, The George Washington University	D.C.	Bernstein, Sandra Reba Bennett, Mahlon Ernest Benton, Mae Able A.B. and B.S. 1942, Bethany College AM 1947, Stanford University	N.Y. Md. Mo.
Berg, Richard Edwin B.S. 1950, University of Maryland	D.C.	Berto, Parker Maria Berry, Alice Cashwell Berry, Charles Reimon Berry, Donald Raymond Berry, Seymour A.B. 1951, The George Washington University	D.C. Md. Texas Va. Md.
Bergman, Cynthia Suzanne Bergman, Melvin John Bergman, William Hunter A.B. 1947, Washburn Municipal University of Topeka AM 1949, Washington State Normal School	Md. Md. Md. Ind.	Berryman, Ruth Ena Berson, Harold Ralph A.B. in Govt. 1949, The George Washington University	D.C. Nev.
Bergman, Robert Theodore B.S. in E.E. 1941, University of Missouri	Md.	Berson, Seymour Arthur B.S. 1942, Tulane University	N.J.
Berg, Hal V. A.B. 1941, University of Wisconsin	Wis.	Bertier, Harry William Bertoni, Louis B.S. 1946, Southern Illinois University AM 1947, University of California at Los Angeles	Va. D.C.
Berg, Robert Austin B.S. 1945, U. S. Naval Academy	Ill.	Bertoni, Louis Bertram, Fieda Susan Bertha, Martha Margaret Bernelly, Robert Ryan A.B. 1949, University of Colorado AM 1944, Colorado College Ph.D. 1948, University of Santo Tomás, Philippines	N.Y.
Berkley, Gerald Lloyd Berkman, Row Underwood Berkowitz, Row Sidney B.S. 1951, Carnegie Institute of Technology	Md. Md. W.Va. N.I.	Besoy, Sheridan Estaban A.B. 1950, The George Washington University	D.C.
Bert, Viva Ada Berman, James Berman, Edward Bernard A.B. 1948, A.M. 1950, Ph.D. 1951, Harvard University	N.Y. I.C. Md.	Bessette, Diana Leona Best, Harold Lloyd A.B. 1949, A.M. 1951, The George Washington University	Vt. N.Y.
Berman, Lester Tullman	N.Y.	Best, Lee James A.B. 1950, Duke University	N.C.
		Bettendorf, Valerie Cecilia	Md.

Betts, Stanley	Md.	Bing, Ralph Nicholas	D.C.
A.B. 1949, American University		Bingner, Janet Louise	Pa.
Bettwy, David Strayer	Pa.	B.S. 1941, University of Pittsburgh	
Betzler, John Richard	Va.	A.M. 1947, University of Maryland	D.C.
A.B. 1950, The George Washington University		Binstock, Richard Martin	D.C.
Beveridge, Richard Alexander	Minn.	Bisack, Baybro G. Margareta	D.C.
Bevermann, Herbert Talmadge	D.C.	Buckner, Louise Farmer	
B.S. 1944, University of Maryland		B.S. in Ed. 1950, Wilson Teachers College	Va.
Bewasky, Jacqueline Ann	D.C.	Bird, William Potter	Va.
Beyle, Laura Annette	Va.	A.B. 1942, Yale University	Va.
Beyer, Carolyn Louise	D.C.	Bison, Helen Leese	
Bianchini, William Robert	Md.	Birmingham, Alva Constance	
Biasini, Adolph Paul	Pa.	B.S. 1941, Radford College	D.C.
B.S. 1949, The George Washington University		A.M. 1940, Columbia University	D.C.
Bibby, Charles King	Va.	Birmingham, Joseph Miller	D.C.
Bichara, Helena Catalina	Philippines	Birmingham, Thomas Harlan	Me.
Bicknell, Beverlee Ann	D.C.	Birnbaum, Eugene Albert	D.C.
Bidwell, Cloyce William	Va.	Birnbaum, George	
Bie, Rita Marie	Fla.	A.B. 1941, Brooklyn College	
Biehl, Harry William Alvin	Va.	M.S. 1949, The George Washington University	Md.
A.B. 1950, University of Maryland		Birnbaum, Henry	
Bielawski, Cedric	D.C.	A.B. 1946, A.M. 1946, New York University	Md.
A.B. 1952, University of North Carolina		Birnbaum, Herbert	Va.
Bienia, Walter John	Md.	B.S. 1950, Johns Hopkins University	D.C.
Bier, David Lawrence	D.C.	Bisbee, Donald Mayo	
Bier, Richard B.	Va.	Bischoff, Miriam Ritter	
Bierbower, James Jacob	Nebr.	B.S. in Ed. 1950, Wilson Teachers College	Min.
B.S. 1947, Georgetown University		Bishop, Christine Elizabeth	Va.
LL.B. 1940, Georgetown University		Bishop, Laura Butler	
Bierly, Robert Foust	Md.	A.B. 1948, The George Washington University	Va.
A.B. 1943, University of Maryland		Bishop, Luz de Selenia	Va.
Bierman, George Raymond	Va.	A.B. 1942, Madison College	Ohio
Bierman, Don Arthur	D.C.	Bishop, Mary Louise	Va.
Biegelow, Louise Ann	Md.	Bishop, Nadeau Hawkins	D.C.
Biegelow, Mozelle DeWitte	D.C.	Bishop, William Hanson, Jr.	Md.
B.S. in Ed. 1952, Wilson Teachers College		Bisshopp, Grace Marilyn	
Biggs, Leland Melvin	Mont.	Bjorklund, Otto Edward	
Bigler, Anna Lisa	Switzerland	A.B. 1949, The George Washington University	D.C.
Bignall, Bliss O., Jr.	Utah	Black, Betsy Anne	D.C.
B.S. 1948, Georgetown University		Black, Elizabeth Rosalie	Md.
Bikle, Anne Seel	Va.	Black, Florence Massie	
Bilanow, Alex	D.C.	A.B. 1946, University of Louisville	Calif.
A.B. 1940, Wayne University		M.S. 1941, Columbia University	
Bild, Norman Chester	Va.	Black, George Alexander	Wyo.
Bulcer, Donald Earle	Va.	A.B. 1940, University of California	N.J.
B.S. 1951, University of Colorado		Black, Jack Preston	Va.
Billar, Barbara Marie	D.C.	Black, Lesh Joyce	
A.B. 1948, The George Washington University		Black, Mary Childs	Va.
Billera, Richard Dominic	N.Y.	A.B. 1943, University of North Carolina	Va.
B.S. 1950, Columbia University		Black, Robert Russell	
Billings, Pauline	Md.	B.S. 1949, Syracuse University	Va.
Billingsley, Carolyn Virginia	Va.	Black, William Perry	
Billingsley, Charles Marion	Md.	B.S. 1947, Illinois Institute of Technology	Ohio
A.B. 1951, The George Washington University		Blackburn, Fred George	Va.
Billingslev, Hilda Ehman	Md.	Blackburn, Gregory James	D.C.
Billon, Nowata Jean	N.M.	Blacker, Raymond	Va.
Bills, De Wane Norman	Md.	Blackman, Charles Mason	N.Y.
Bills Dorothy Jane	Md.	B.S. 1926, College of Charleston	
A.B. 1944, Western Maryland College		Blackmon, Leon Charles	Calif.
Bilmanis, Ceronis	D.C.	A.B. 1951, Bates College	Md.
Bilmanis, Milda Emilija	D.C.	Blackmon, Mildred Therese	
Bilmanis, Edgars Leopolds	D.C.	Blackwelder, Theodore Fisher	D.C.
Binder, Robert T.	Ill.	B.S. 1952, Roanoke College	D.C.
B.S. 1949, M.S. 1950, East Texas State Teachers College		Blackwell, Patricia Ann	N.Y.
Binford, Marjoria Lynette	Va.	Blades, Beverly Layton	
Bing, John Henry	Ill.	Bladykas, Felix Fred	

Blaesser, Willard William B.S. 1934, A.M. 1940, University of Wisconsin	D.C.	Bloom, Joseph A.B. 1949, Brown University	R.I.
Blaetter, Channing Davis	Va.	Bloom, Wallace	Texas
Blair, Charles Robert	Tenn.	A.B. 1910, College of the City of New York	
Blair, James Colbert	D.C.	M.S. 1952, Trinity University	D.C.
Blake, Andrew Betz	Md.	Blubstein, Seymour	Va.
Blake, Christine	Md.	Blue, Audrey Ellen	N.C.
B.S. 1950, University of Maryland		Blue, Mary Alice	
Blake, Doris Sidney	Va.	A.B. 1948, University of North Carolina	
B.S. 1950, Radcliffe College		Bluestone, Abraham	D.C.
Blake, Edward F. well	Va.	A.B. 1947, The George Washington University	
Blake, Francis Edward	Md.	Blum, Bernard Marvin	Md.
Blake, Philip Theobald	N.J.	Blum, Daniel	D.C.
Blake, Richard William	N.Y.	B.M.E. 1944, College of the City of New York	
Blake, William Roberts	Md.	Blum, Fred Gabriel, Jr.	Wis.
Blakemore, George Jefferson, Jr.	Pa.	B.S. 1950, University of Wisconsin	D.C.
A.B. 1949, The George Washington University		Blum, Joseph	
Blalock, Ose Thaxter, Jr.	D.C.	B.S. 1940, College of the City of New York	
Blankard, Signe Hannibal	D.C.	A.M. 1948, The George Washington University	
Blanken, Joan Helen	D.C.	Blum, Michael Berry	D.C.
Blankenship, Alvin Cleon	D.C.	Blumberg, Beverly Gayle	D.C.
Blankenship, Boyd Allen	Md.	A.B. 1944, University of Southern California	
Blankenship, Mildred Louise	N.C.	Blume, Adelaide	D.C.
Blankley, William Bardo	Va.	Blumenfeld, Isadore David	Ohio
Blankstein, Mitchell	D.C.	B.S. in E.E. 1949, Case Institute of Technology	
Blasdel, Helen Carol	D.C.	J.D. 1951, The George Washington University	
Blatty, William Peter	D.C.	Blumenthal, Howard Lee	D.C.
A.B. 1950, Georgetown University		Blumenthal, Violet Smith	D.C.
Blau, Joan	Md.	Blumer, Emily Selma	Ola.
Blaustein, Saul Joseph	D.C.	Blumler, Marian	Va.
B.S. 1948, College of the City of New York		A.B. 1948, The George Washington University	
Bleam, Charles Robert, Jr.	D.C.	Blundried, Robert Henry	N.Y.
Bleam, Harvey Alexandra	D.C.	A.B. 1941, M.S. 1944, Syracuse University	
B.S. 1950, Wilson Teachers College		Boar, John Donaldson	Pa.
A.M. in Ed. 1952, The George Washington University		A.B. 1951, Lebanon Valley College	Pa.
Blackley, Viola Prudence	Ga.	Boaz, Margaret Bowers	
A.B. 1940, Piedmont College		A.B. 1951, Lebanon Valley College	
Blacksoe, Samuel Carter	Md.	Brauchman, Gordon Franklin	D.C.
A.B. 1952, Haverford College		Brown, Nancy Elizabeth	Pa.
Blacksoe, Theodore Robeson	Md.	Boat, Barbara Irene	D.C.
Blocker, David	N.Y.	A.B. 1951, College of Wooster	
Block, Howard Leslie	D.C.	A.M. 1952, Middlebury College	D.C.
Bloeba, Pauline Nell	D.C.	Boatner, Emily Jane	D.C.
Bloeba, Robert Lee	N.C.	Bobb, Anna	N.J.
A.B. 1948, Michigan College		Bloch, Leo, Philip James	D.C.
A.M. 1946, University of North Carolina		Bode, George Fred	D.C.
Bloer, Glenn Edward	Iowa	Bodlen, Elizabeth Rosemary	D.C.
B.S. in E.S. 1947, Georgetown University		Bodisch, Stella Flower	Va.
Blitzstein, Ethel	D.C.	B.S. 1948, State Teachers College, West Chester, Pa.	
Bloch, Robert Oakleigh	Nebr.	Bodman, Ruth Marie	Pa.
A.B. 1949, The George Washington University		Bodman, Carl Theodore	Pa.
Bloch, Phyllis Jane	D.C.	Bodner, Jesse Clara	N.Y.
A.B. 1940, Brooklyn College		Bodson, Vincent Roland	Mich.
Block, Bridget Maureen	N.Y.	A.B. 1948, Oberlin College	
Block, Donald Stanley	D.C.	Ross, Roderick Hans	D.C.
A.B. 1951, New York University		Roscher, Arnold John	D.C.
Block, Leah Joyce	N.J.	Hoplan, Andrew	Pa.
Block, Roger Wolcott	D.C.	Bopen, Robert William	D.C.
Block, Victor Irving	D.C.	A.B. 1949, University of Pennsylvania	
Blocker, Hugh Dunwood	D.C.	Robert, Jackson Lazier, Jr.	Va.
Blondes, Leonard Saul	Md.	A.B. 1949, Cornell College	
A.B. 1951, Western Reserve University	D.C.	Bogges, Jack Price	Va.

Bogner, Ernest	D.C.	Boone, James Saunders	Calif.
Bogner, Nathan	D.C.	A.B. 1950, University of California	Md.
Bogounoff, George Benjamin	N.J.	Boor, Samuel Vladimir	Md.
Bogren, Joyce Lucille	Va.	Boord, Robert Lennis	
Bohan, John Patrick	Md.	A.B. 1950, Washington and Jefferson College	D.C.
Bohan, Joseph James	Md.		Md.
Bohan, Paul Francis	Md.	Booros, James Louis	
Boise, James William	D.C.	Boorstein, Sally Ruth	Va.
A.B. in Govt. 1952, The George Washington University		A.B. 1952, University of Maryland	
Boussoneault, Lorette	D.C.	Booth, Charles Theodore	Va.
Boissy, Joseph Philip	Mass.	A.B. 1933, University of Richmond	Calif.
A.B. 1951, Dartmouth College		Booth, Elmer Welcome, Jr.	
Boisvert, Gerald Elroi	D.C.	Booth, Fred Diether	
Boisvert, Harold Vincent	Md.	B.S. in C.E. 1932, University of California	D.C.
Ph.B. in Com. 1940, Notre Dame University			Mass.
LL.B. 1947, Catholic University of America		Bord, Bernard Charles	Md.
Boisvert, William Edward, Jr.	D.C.	Borders, Glenn Houghton	
A.B. 1947, University of Utah		Borders, Mary Louise	
Boland, John William	D.C.	A.B. 1951, Grinnell College	D.C.
Boland, Joseph Francis	N.J.	A.M. 1952, Columbia University	D.C.
Boland, Margaret Anne	N.Y.	Bordwell, Theresa Bell	Md.
A.B. 1950, Nazareth College, N.Y.		Borea, Antoinetta	Md.
Bold, Zelda Don	Ill.	Borger, Henry Miller, Jr.	D.C.
Boldt, Carl August	Pa.	Borges, Douglas Jon	Mass.
Boldt, John Henry	Md.	Borges, Robert Patrick	
Bollenbaugh, Eleanor Mae	D.C.	Bornes, William Alfred	N.Y.
Boles, Roger	Calif.	A.B. 1947, St. Paul Seminary	N.Y.
A.B. 1949, Stanford University		Bornstein, Irwin Seymour	D.C.
Boley, Robert Eugene	D.C.	Borson, Bernard Aaron	Md.
Boika, Robert William	D.C.	Borowick, Eva	Va.
Bolling, Lida Ling	Texas	Borror, Walter Leon	N.H.
B.S. 1946, Tatung University, China		Bora, Robert John	D.C.
Bollinger, Helen Marie	D.C.	Borsa, Nicholas, Jr.	D.C.
Bollo, Jerome Michael	Md.	Borsody, Frank Joseph	Va.
Bolton, Edith Iett	Md.	Borwick, Ronald Jack	Va.
Bolton, Ronald McLean	Va.	Bortz, Clara Victoria	D.C.
Bolton, Vivian Reynolds	D.C.	Bosin, Bernice May	Va.
A.B. in Govt. 1950, The George Washington University		Bosin, Sylvia Estelle	D.C.
Boltz, Donald Arthur	S.D.	Bosmans, Thomas Constantinus	
Bonanni, Louis John	Pa.	Boss, Evelyn Emma	D.C.
A.B. 1952, Wilkes College		A.B. 1936, University of Oklahoma	Md.
Bonar, Carol Jean	W.Va.	Bostick, James Lynn	
Bond, Charles Stephen	Ky.	Bostwick, Robert Edwin	Md.
Bondy, Esther Esther	D.C.	A.B. 1948, University of Alabama	D.C.
A.B. 1942, Brooklyn College		Boswell, John Gordon	D.C.
Bonfield, Charles Thomas	Va.	Boteler, Basil	D.C.
Bonham, Barbara Ann	Md.	Boteler, Lois Eileen	Minn.
Bonham, L. Warren	D.C.	Boteler, Millard Eugene	Va.
Bonilla, Lempira Eusebio	Honduras	Botko, Mary Anna	Pa.
Bonia, Austin Jerome	D.C.	Botten, Donald Leroy	Va.
B.S. 1934, College of the City of New York		Bottenfield, Richard Joe	
MS 1942, The George Washington University		Bottomley, Harold Sydney, Jr.	D.C.
Bonkosky, Harry Anthony	D.C.	B.S. 1937, U.S. Naval Academy	Va.
Bonner, Josephine Elizabeth	Va.	Bou, Edward Charles	D.C.
Bonnett, Joseph Lewis	D.C.	Bouldin, Isabel Spotswood	
Bonnett, Leo Victor	Ill.	Bouquet, Natalie S.	
A.B. 1937, University of Minnesota		A.B. 1931, The George Washington University	Va.
A.M. 1942, The George Washington University			
Bonnett, Lowell Wootton	Utah	Bour, William Vincent, Jr.	Va.
Bonos, Loretta Eleanor	D.C.	LL.B. 1939, American University	D.C.
Bonthall, Murray Watson	D.C.	Bourg, Ronald Allen	D.C.
Booker, David Carlton	Va.	Bourland, Denis Crittenden	Mass.
Book, Kenneth Garry	Md.	Bourland, Stephen Phelps	
B.S. 1938, University of Wisconsin		Bourne, Barbara Kiernan	
Boone, Aretas Cephas	Calif.	B.S. 1948, Massachusetts State Teachers College	Va.
A.B. 1950, Stanford University		A.M. 1950, Syracuse University	
		Bourne, Hunter Carson, Jr.	
		B.S. in F.E. 1945, B.S. in I.E. 1947, Virginia Polytechnic Institute	D.C.
		Bouroum, Nanda Paovayota	N.H.
		Bourque, Beverly Ann	

Bouscaren, Nancy Margaret A.B. 1951, The George Washington University	D.C.	Bradley, Betty Kathryn B.S. 1947, Missouri State College	Md.
Bouton, Kathleen Jefferson	Va.	Bradley, Edgar Francis	Pa.
Boutwell, Sara Anne	Ala.	Bradley, Ernest Howell, Jr.	Va.
Bovee, Howard Ralph B.S. 1950, The George Washington University	Va.	Bradley, O. Lynne	Mass.
Bovin, Henry Eugene A.B. 1948, A.M. 1950, University of Florida	Fla.	Brady, Henry William A.B. 1952, University of East Manila	D.C.
Boward, Lawrence Mark	D.C.	Brady, Melvin Michael	Md.
Bowen, John Franklin	Va.	Brahm, Frederick Arnold	D.C.
Bowen, Leonard Ernest	Md.	Braker, Patricia Reese B.S. 1959, Northwestern University	D.C.
Bowen, Louis Green A.B. 1915, American University	D.C.	Braker, William Paul B.S. 1950, Northwestern University	Va.
Bowen, Margaret	Va.	Bram, Bert	D.C.
Bowen, Mark G.	D.C.	Brame, Oleta	Fla.
Bowen, Robert Julian	D.C.	Bramhall, Edwin Ellis	Calif.
Bowen, Verna Sarah	D.C.	Bramley, Nancy Lou	Ohio
Bowesman, Arthur Wycott	Va.	Branch, Elizabeth Helen	Conn.
Bowers, Richard Simpson A.B. 1955, The George Washington University	D.C.	Brand, Albert William, Jr.	Md.
Bowie, Barbara Ann	D.C.	Brandenburg, James William III	D.C.
Bowie, Frank McKay	Va.	Brandenburg, Virginia Allen	D.C.
Bowling, James Walter	W Va.	Brandenburg, Eugene	Va.
Bowling, Mary Theresa	D.C.	Brandt, Harry Marum	D.C.
Bowman, C. Jean B.S. 1951, Indiana State Teachers College	D.C.	Brandon, Gladys Darrell	Va.
Bowman, Doris Marie	Va.	Brandon, James Earl	Va.
Bowman, Russell William B.S. 1951, Johns Hopkins University	D.C.	Brandon, Margaret Ann	D.C.
A.M. 1952, The George Washington University	D.C.	Brandon, Ronald Dean	D.C.
Bowman, Thomas George	D.C.	Brandt, Robert Fred B.S. 1941, A.M. 1946, New York University	Md.
Bowser, Donald William	Ohio	Branner, Georgine	D.C.
Bowser, Kay Adelaide	D.C.	Brasong, Arthur Livingston	Ga.
Bowyer, Carl B.S. 1940, College of the City of New York	Md.	B.F.E. 1952, Georgia Institute of Technology	
M.S. 1952, The George Washington University		Brannock, Virginia Lucille	Iowa
Bowe, David Barry	Va.	Brannon, Howard Wesley	D.C.
Bowl, Barbara Elizabeth	D.C.	Bransford, Joan Celestine B.S. 1955, Mary Washington College	Va.
Bowl, Frank John	Va.	Brant, Mary F.	Pa.
Bowl, Harold Loomis	Ohio	Brasted, John Dugno	Md.
Bowl, Milton Alexander B.S. 1950, Washington State College	D.C.	Bratton, Jerome Durea A.B. 1949, The George Washington University	D.C.
Bowl, Tobias I.	Miss.	Bratton, Ethel Mae A.B. 1924, Daniel-Baker College A.M. 1931, University of Texas	
Bowles, Reuben Whittle, Jr. B.S. 1947, Mississippi State College	D.C.	Braun, Fred Charles, Jr. B.S. 1954, University of Maryland	N.Y.
Bowser, Betty Jane A.B. 1948, Wake Forest College	N.C.	Braun, Frederick Herman M.E. 1948, University of Cincinnati	Md.
Bowles, Vincent Depaul B.B.A. 1949, Manhattan College	Va.	Braun, Helen Jane	Ohio
Bowles, Barbara Jane	N.Y.	Brauner, Selma Moody B.S. 1952, University of Maryland	D.C.
Bowles, Leona Bernadette B.S. 1946, The George Washington University	D.C.	Bray, Ruth Marie	Ohio
Bowles, William Donald B.S. 1950, Franklin and Marshall College	Pa.	Braymer, Barbara Jane B.S. 1951, Florida State University	Fla.
Bowles, Mary Elizabeth	D.C.	Breach, John Orl	Va.
Bracken, Anna Emile B.S. 1948, University of Maryland	D.C.	Bready, George Galt A.B. 1955, University of Virginia	Va.
Bradlock, Harry Elton B.S. 1945, U.S. Naval Academy	D.C.	Brearex, Grace Lady A.B. in Ed. 1950, The George Washington University	D.C.
Bradford, Ralph Gordon A.B. 1951, The George Washington University	Va.	Brekendridge, Charlotte Thomas A.B. 1949, Antioch College	D.C.
		Breed, Rosella M. H.	D.C.
		Breen, John Patrick A.B. 1941, Vassar College	N.Y.
		Breen, Martin Joseph A.B. 1952, Stanford University	D.C.
		Breen, Mary Margaret A.B. 1946, Catholic University of America	D.C.

Bregman, Stanley Irwin	D.C.	Brinow, Elizabeth Anne	N.Y.
Brehm, Frederick Carlton	Wis.	A.B. 1952, Vassar College	Va
A.B. 1948, University of Wisconsin		Britt, Olive Kendrick	Pa.
Breidenbach, Shirley R.	Md.	B.S. 1949, Oregon State College	Md.
Brenning, Amelia	N.D.	Britt-Hobbs, Lillian Custis	Md.
Bremer, Frederick Godfrey	Md.	Britten, Edward Raylis	Mich.
B.S. 1948, University of Notre Dame		Brittenham, Gerald Wright	D.C.
Bremer, Hans Otto	N.Y.	Brittenham, Irene Catherine	Md.
A.B. 1949, Hofstra College		Bottle, David F., Jr.	
Brendler, Ivan Bernard	D.C.	Britton, Keith George	
B.S. 1950, University of Maryland		A.B. 1952, The George Washington	
Brennan, James Joseph	Pa.	University	Mo.
Brennan, Julie Agnes	Mass.	Britton, Mary Martha	D.C.
Brennan, William Francis	D.C.	Britton, Theodore	Minn.
B.S. 1949, University of Scranton		Broad, Charles Stuart	
Brenneman, George Vincent, Jr.	Md.	A.B. 1950, University of Minnesota	Va
Brenner, Berthold	D.C.	Broaddus, John Thomas, Jr.	Pa.
Brenner, Daniel Campbell	Fla.	A.B. 1950, Lynchburg College	Va.
Brenner, Esther Lerner	Md.	Broadwater, Marcella Jane	Md.
Brenner, Joseph Frank	N.J.	Brobeck, George Kenneth, Jr.	Va.
A.B. 1944, Rutgers University		Broberg, John Bennett	Va.
Brenner, William Chandler	Pa.	Brock, Ava Nell	
Brett, Sue McLaughlin	Md.	Brock, John Roy	
A.B. 1924, A.M. 1936, University		A.B. 1942, L.I.B. 1948, The George	Md.
of North Carolina		Washington University	D.C.
Brettell, James Alfred	D.C.	Brock, Xavier Martin	
Brew, Eleanor Milling	Va.	Brockmeyer, Rita Loretta	Iowa
A.B. 1942, Hunter College		A.B. 1951, University of Maryland	
Brice, Lawrence Smyth	Md.	Broderick, Byron Thomas	R.I.
A.B. 1942, Washington College		A.B. 1950, University of Iowa	
Brice, Noma Reid	Mich.	Broderick, George Vincent	D.C.
A.B. 1928, A.M. 1937, University of		A.B. 1951, Brown University	
Michigan		Brodie, Dorothy Ray	
Brick, Philip Douglas	Minn.	B.S. 1949, The George Washington	Va
Brickfield, Cyril Francis	N.Y.	University	
I.L.B. 1948, Fordham University		Brodney, Francis Emile	
Brickley, John Halsey	Va.	B.S. 1941, Long Island University	Md.
B.S. 1941, Montana State College		A.M. 1949, New York University	Va.
Bradeson, William Emerson	Iowa	Brody, Leonard Harry	Ga.
Bridges, David Clifton	Tenn.	Broesamle, Jack Richard	D.C.
B.S. 1951, A.B. 1952, Tennessee Poly-		Broedon, James Lamar	D.C.
technic Institute		Brouder, Cynthia Dana	Ind.
Bridges, Donald Reid	D.C.	Broman, Karin Elizabeth	Iowa
Brieske, Linus John	Va.	Bromberg, Howard	D.C.
Briesmeister, Ernestine Anderson	Va.	Bromble, David Albert	
Brooks, John Allen	Ohio	Bromell, John Bowker	D.C.
Brooks, Russell Wilfred	D.C.	B.S. 1952, Northwestern University	
Brought, Conner Buck	Md.	Bronaugh, John Reeder	
A.B. 1951, Rutgers University		B.S. in M.E. 1947, Virginia Poly-	
Bright, Rosanna	N.Y.	technic Institute	
A.B. 1937, Hunter College		J.D. 1941, The George Washington	
Brighton, Edward Earl	Wash.	University	D.C.
B.S. 1944, University of Washington		Broner, Janine Reiskin	D.C.
Brill, Edward Pope	Md.	Bromston, Max Wilfred	N.Y.
L.I.B. 1950, The George Washington		Brook, Robert Arnold	Md.
University		Brooke, Louise Vaughan	D.C.
Brill, Mary Martin	D.C.	Brooks, Alvin Jerry	Va.
Brink, Margit Ragnhild	Minn.	Brooks, Benjamin Talbot, Jr.	
Brinkhoff, Karen	Va.	A.B. 1949, Yale University	
Brineman, Clement S.	Ind.	Brooks, Daniel Philip	
Bronitzer, Peter Helmut	N.Y.	B.S. 1943, U.S. Naval Academy	Kan.
A.B. 1949, Syracuse University		M.S. 1949, University of California	Va.
Brinkley, Charles Earl	D.C.	Brooks, Phillip Henry	
Brinkley, Marie	D.C.	Brooks, Randall	Va.
Brinson, Edith Lucille	Md.	A.B. 1951, The George Washington	Md.
B.S. 1950, University of Maryland		University	N.Y.
Brinton, Martha	N.Y.	Brooks, Roy Dale	
A.B. 1951, Brown University		Brooks, William Allen, Jr.	
Brush, William Murray	Md.	Brooks, William Bernard, Jr.	Mich.
A.B. 1928, Franklin and Marshall		Brooks, William T.	N.Y.
College		B.S. 1931, Brooklyn College	
A.M. 1932, Columbia University		Broome, Jack Webster	
Brissette, Marie Alice	Pa.	Brophy, Patricia Dorothy	
Bristow, Eleanor Ann	D.C.	A.B. 1946, Vassar College	

Students Registered

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Brosius, Earl Eugene	Pa.	Brown, Lester Theodore	Pa.
Brosky, Mary Jane	D.C.	B.S. 1947, Pennsylvania State Teachers College	
Brosnan, James Joseph	Mass.	A.M. 1949, State College of Washington	
B.S. 1951, Xavier University			
Broseau, Reginald George	Vt.	Brown, Margaret Gould	Va.
I.L.B. 1931, Northeastern University		B.S. 1933, Longwood College	
Brothers, Elizabeth Corinne	Md.	Brown, Marvin Joel	Ind.
Brownstein, Sidney H.	N.Y.	Brown, Mary Elizabeth	Va.
A.B. 1951, College of the City of New York		Brown, Mary Lee Gaines	D.C.
Brower, Elyne Marian	N.J.	Brown, Melvin Wilbur	Md.
B.A.E. 1949, Purdue University		B.S. 1942, U.S. Naval Academy	
Brown, Alma Phillips	Va.	N.E. 1949, Massachusetts Institute of Technology	
A.B. 1916, Limestone College		Brown, Minnie Ray	D.C.
Brown, Anne Carter	D.C.	Brown, Nancy Jane	Va.
Brown, Anne Simpson	Ark.	Brown, Oril Irene	Va.
A.B. 1945, Northeastern State College, Okla.		B.S. 1910, Northwestern University	
Brown, Ben Locke	Ky.	A.M. 1951, The George Washington University	
Brown, Bertie Helen	Fla.	Brown, Patricia Louise	La.
Brown, Carolyn Ann	D.C.	Brown, Reva Virginia	N.C.
Brown, Charles Donald	Va.	Brown, Richard Crosby	D.C.
A.B. 1953, University of Miami		Brown, Richard Lee	Texas
Brown, Charles Harmon	Fla.	I.L.B. 1940, University of Texas	
A.B. 1952, Lafayette College		Brown, Robert Cecil	Oreg.
Brown, Charles Irving	D.C.	A.B. 1951, Reed College	
Brown, Christopher Kingsley	Va.	Brown, Ronald Lawson	Va.
Brown, Curtis Leslie	D.C.	Brown, Ruth Kemp	Va.
Brown, Donald Acker	Md.	A.B. 1927, Southwestern University	
A.B. 1951, St. John's College		Brown, Shirley Louise	D.C.
Brown, Dorothy	N.Y.	Brown, Susan Noble	D.C.
Brown, Dulsey Ann	Va.	A.B. 1952, Brwn Mawr College	
Brown, Earl Courtland	D.C.	Brown, Thomas Albert	N.J.
Brown, Edward Livingston	D.C.	Brown, Thomas Marion	Va.
Brown, Elise Ann	Va.	Brown, Vincent Charles	Md.
B.S. 1949, M.S. 1950, The George Washington University		Brown, William Brigham III	D.C.
Brown, Elise Mio	D.C.	Brown, William Eugene	Ind.
A.B. 1949, The George Washington University		Brown, William Garrison	D.C.
Brown, Eric Davison	Va.	Brown, William Stuart	Iowa
B.S. 1949, Pennsylvania State College		M.S. 1951, Iowa State College	
Brown, Ernestine Bain	Texas	Brown, William Theodore	Va.
Brown, Frederick William	N.Y.	Browne, Milton Ronald	Md.
B.S. 1918, U.S. Naval Academy		Browne, Patricia	D.C.
Brown, G. Stanley	Okla.	Brownfield, John Herbert	Va.
A.B. 1950, A.M. 1952, University of Oklahoma		B.S. 1926, U.S. Naval Academy	Mo.
Brown, Galen Craig	Va.	M.B.A. 1947, Harvard University	
A.B. 1941, Whittier College		Browning, Francis Gerard	Md.
Brown, Garry Eldridge	Mich.	Browning, Lester H.	Va.
A.B. 1951, Kalamazoo College		A.B. 1948, Wayne University	D.C.
Brown, George Edward	Va.	Browning, Thomas Jefferson	Calif.
A.B. 1935, Wisconsin State Teachers College, Eau Claire		Brownson, Robert Henry	
M.S. 1941, University of Colorado		B.S. 1948, John Carroll University	
Brown, James Carlton	Ga.	M.S. 1950, The George Washington University	
B.S. 1950, Southeastern University		Browster, Albert Joseph	D.C.
Brown, James Vernal	W.Va.	Broy, James William	Va.
A.B. 1950, Morris Harvey College		Broz, Richard Francis	Wash.
Brown, James White, Jr.	Va.	Brozick, Jean Mary	D.C.
Brown, Jean DeLong	D.C.	Brubaker, Virgil Wilson	Ohio
A.B. 1952, Wellesley College		R.F.E. 1941, Ohio State University	
Brown, JoAnne Charlotte	Minn.	Brue-Breer, Florence James	D.C.
Brown, Joe Ellsworth	Md.	Bruch, George Daniel	Va.
Brown, Joseph Manson, Jr.	S.C.	Ph.B. 1939, Xavier University	
B.S. 1948, The Citadel		I.L.B. 1941, Georgetown University	
Brown, Julian Mitchell	S.C.	Bruckner, Gloria Agnes	Va.
A.B. 1953, University of Georgia		Bauder, Bert Alan	N.J.
		A.B. 1952, Rutgers University	
		Bruffley, Albert Henry	D.C.
		Brown, Helen Conley	Pa.
		Bromback, Melbaed	Va.
		B.S. 1951, Madison College	
		Brumble, David Albert	Iowa

Brunenkant, Jeannette	Va.	Bugala, John Anthony	N.H.
Brunner, Weston Gwathmey	D.C.	Buhl, John Monroe	Md.
Brunkow, Joyce	Ill.	Buhrman, Lloyd William	Va.
B.S. 1951, Northwestern University		A.B. 1939, A.M. 1941, Washington University	D.C.
Brunner, John Junius	Va.	Bustendat, Aletta Wilhelmina	D.C.
B.E.E. 1950, Catholic University of America		Byrno, Bruno Bernard	Pa.
Brunner, Ruth Hinkle	Va.	B.S. 1949, Pittsburgh University	Mich.
B.S. in P.E. 1941, A.M. in Ed. 1951, The George Washington University		Bulinsky, Stella	Va.
Bruno, Russell John	N.Y.	Bulkeley, James	Md.
A.B. 1950, M.B.A. 1951, Cornell University		Bull, Frate, Jr.	
Bruna, Nicolaus, Jr.	Md.	Bullard, Aldine Margaret	
B.S. 1947, University of Miami		A.B. 1946, The George Washington University	Md.
LL.B. 1949, LL.M. 1952, Georgetown University		Bullington, Edward Weeks	
Brunswick, Charles Edward	Va.	B.S. 1947, Randolph-Macon College	
Brush, Frederick James	Va.	M.S. 1948, Virginia Polytechnic Institute	Wyo.
Brust, Nora May Tristipoe	D.C.	Bullock, Bob Ray	D.C.
Bruton, Sally Ann	Va.	Bullock, Frederick Allyn	Mich.
Bryan, Billie Marie	D.C.	Bullock, Joe R.	Va.
Bryant, Charles Reed	Mo.	A.B. 1947, Denver University	
A.B. 1950, A.M. 1950, George Peabody College for Teachers		Bullock, Robert Graham	Va.
Bryant, Florence Louise	Pa.	A.B. 1950, Johns Hopkins University	D.C.
Bryant, Jack Martin	Mich.	Bullough, John Frank	D.C.
Bryant, Martha C.		Bulman, Grace	
B.S. 1951, University of Michigan		B.S. 1924, Columbia University	
Bryant, Robert Singleton	D.C.	Beltman, John Dale	
Bryson, Dolores Ann	Mass.	B.S. 1952, The George Washington University	Cal.
Brzozowski, Edmund	D.C.	Bunch, James Paul	Va.
B.E.E. 1950, The George Washington University		Bunker, Joseph Baldridge Jr.	Md.
Bucci, Dominick Anthony	Va.	B.S. in Eng. 1950, The George Washington University	D.C.
Buchanan, Jean Mary	D.C.	Bunnie, Klara Salma	D.C.
Buchanan, Jean Schirm	Conn.	Bunten, Elizabeth	
B.S. 1937, Russell Sage College		A.B. 1950, The George Washington University	D.C.
Buchanan, Juliet Sophia	Pa.	Bunting, Sylvia Lee	N.Y.
Buchanan, William Edward	D.C.	Buonagurio, Hugo Vincent	Pa.
B.S. 1953, A.M. 1951, Johns Hopkins University		Burak, Alex	
Buchholz, Edward Walter	D.C.	A.B. 1950, Franklin and Marshall College	Va.
Buchinsk, Edward George	D.C.	Burch, Sally Ann	D.C.
Buchmann, Britte, Klara	Md.	B.S. 1950, University of Tennessee	Md.
Buck, Donald Alden	Conn.	Burdett, Melvin	Va.
Buck, Richard Sutton	Va.	Burdette, Earl Leroy	Mich.
Buckberg, Morton I.	D.C.	Burdine, Alfred Lytle	
A.B. 1951, The George Washington University		Burford, James Vernon	Va.
Buckingham, John Daniel	D.C.	A.B. 1944, University of Mississippi	
Bucklew, Oscar Thomas	W.Va.	Burgess, Aubrey Lewis	Ma.
Bucklew, Daniel John	D.C.	B.M.E. 1948, The George Washington University	
Bucklew, James Joseph	N.H.	Burgess, Eileen Elizabeth	D.C.
A.B. 1952, St. Anselm's College		A.B. 1952, The George Washington University	Va.
Buckley, Kathleen Mary	N.Y.	Burgess, George Milton	Md.
Buckman, Elise	W.Va.	Burgess, I. Paul	N.M.
A.B. 1947, Marshall College		Burghardt, Henry Herbert	Va.
Buckmann, Brigitte Klara	Md.	Burkhardt, Daniel A.	D.C.
Buckmaster, George Walton	Pa.	Bushara, Patricia Prudence	D.C.
Buckner, Robert R.	D.C.	Burk, Donna Elizabeth	D.C.
Buday, Joseph	Va.	Burka, Edward Allen	
Budd, Philip Joseph	Va.	Burka, Leon Harry	
Budinsky, Joseph William	Pa.	B.S. 1951, The George Washington University	Md.
Budkovsky, Erazme Kasimer	Calif.	Burke, Calvin Roscoe	Pa.
Budwy, Mildred Viehling	Md.	Burke, David William Jr.	D.C.
A.B. 1950, The George Washington University		Burke, Donald Edward	D.C.
Buehler, Walter Paul	Pa.	Burke, Elizabeth Anne	
B.S. 1950, Pennsylvania State College		Burke, Frances Vessey	
Buflum, Fenwick Noble	N.Y.		
B.S. 1951, Middlebury College			

Students Registered

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Burke, Francis Kerr	Va.	Burton, George, Jr.	N.J.
Burke, James Lansing, Jr.	Md.	B.S. in M.E. 1950, Virginia Poly-	
Burke, John Grant	Va.	technic Institute	
Burke, Joseph P.	Va.	Burton, Robert Lee	Md.
Burke, Patricia Michelle	N.Y.	Burwell, Ann Hutton	Va.
Burke, Robert Thomas		A.B. 1952, The George Washington	
A.B. 1947, Princeton University		University	
Burke, Thomas William	Ill.	Busbee, Harriett Patricia	D.C.
Burks, William Philip	D.C.	Busby, Andrew Lytleton	Miss.
Burks, Craigbill Stoner	Va.	A.B. 1942, Mississippi College	
B.S. 1941, Hampden-Sydney College		Busby, Robert Lee	D.C.
Burks, George Edward	D.C.	Buser, Charles Aubrey	Md.
Burks, Kenneth Everett	D.C.	A.B. 1949, Goshen College	
Burks, Mary Joyce	Va.	Buser, Elizabeth Anne	D.C.
Borman, Gary Neil	N.J.	A.B. 1948, The George Washington	
Borman, John Richard	Md.	University	
Burnet, Arthur Russell	D.C.	Bush, Eleanor Louise	D.C.
A.B. 1932, Oberlin College		Bushner, James Ralph	Va.
Burnett, Eleanor Ashbey	Fla.	Busits, Louis Frank	Pa.
Burnett, Gerald Orley	Iowa	Bustos-Videla, Cesar	D.C.
Burnett, Lloyd Calvin	Fla.	Butcher, Asta	D.C.
Burnett, Sue Stokely	D.C.	Butcher, Cecil Orin	Md.
A.B. 1941, The George Washington		Butchers, Barbara Ann	Va.
University		A.B. 1952, University of Texas	
Burney, A. Stanley	N.Y.	Butland, Gloria	D.C.
B.C.E. 1950, College of the City of		Butler, Bruce, Jr.	Md.
New York		B.S. 1951, Franklin and Marshall	
Burnley, Gloria E.	Va.	College	
A.B. 1941, The George Washington		Butler, Charles Aloysius	N.J.
University		B.S. 1948, St. Peter's College	
Burns, Anne Marie	D.C.	Butler, Charles Robert	Md.
Burns, Nancy C.	D.C.	Butler, Dan Loran	D.C.
A.B. 1951, Bryn Mawr College		Butler, Francis Morris	N.Y.
Burns, Claire L.	D.C.	B.S. 1943, University of Maryland	
Burns, Edward Joseph	D.C.	Butler, Guy Harry	Md.
A.B. 1951, The George Washington		Butler, John Kenneth	Tenn.
University		Butler, Richard Frank	Calif.
Burns, Edward Stitt	D.C.	Buttes, Charles	Ohio
B.S. 1911, U.S. Naval Academy		B.S. 1950, Western Reserve University	
Burns, Francis Henry	Pa.	Bott, Frederick David	D.C.
B.S. 1951, University of California	Calif.	Butterfield, James Reid	D.C.
Burns, Louella Catherine		Busterly, Arlene Carter	D.C.
Burns, Michael Francis	Ohio	Butler, Virginia Gilmer	Calif.
A.B. 1944, Yale University	Mass.	Button, Mildred Clair	N.Y.
Burns, Robert Emery	D.C.	Button, Richard F.	N.Y.
Burns, Robert James	N.Y.	Butts, Arthur Laverne	Wis.
Burns, Robert Lee	Va.	Butas, Hallock Arthur	D.C.
Burns, Robert Samuel	Va.	Buyarowicz, Stella Mary	Ohio
Burns, Rollin Lee	Texas	A.B. 1945, Western Reserve University	
A.M. 1945, Princeton University		Buzzell, Robert Dow	Va.
Burns, Ruth Alice Tomasick	Va.	Byer, Seymour	Conn.
Burns, Thomas Francis	Md.	B.S. 1951, The George Washington	
B.S. in Ed. 1941, St. Thomas College		University	
Burns, Thomas Lawrence	Va.	Burd, Lonnie Guy, Jr.	Tenn.
A.B. 1941, Canisius College		L.L.B. 1948, University of Missouri	
Burroughs, Maudine Jameson	Texas	Burd, Robert Calale	W.Va.
A.M. 1946, Howard Payne College		Byrne, John Andrew	Mass.
for Women		B.S. in B.A. 1949, Babson Institute	
Burrow, William Gordon	N.Y.	Byrne, Mary Ann	D.C.
Burrows, Judith Rae	Pa.	Byrne, William Edward	Mo.
Bursey, George Herbert Patrick	D.C.	A.B. 1942, University of Chicago	
B.S. 1946, U.S. Coast Guard		Byrnes, James Clinton	Okl.
Academy		A.B. 1952, University of Oklahoma	
Burton, Edna Ruth	Miss.	Byrns, Lou Elizabeth	Wis.
A.B. 1951, Whitman College	Wash.	A.B. 1929, A.M. 1931, Ph.D. 1943	
Burner, Carol Elmer	D.C.	University of Wisconsin	
B.S. 1947, Worcester Polytechnic		Byron, Goodloe Edgar	Va.
Institute		A.B. 1951, University of Virginia	
Burns, Agnes	D.C.	Byram, Burton Oland	D.C.
Burton, Clayton Benjamin	Ill.	Bywater, Maurice John	Va.
		A.B. 1950, The George Washington	
		University	

C		
Cabezas, Rita Lilia Diaz	Cuba	Callanan, Margaret Joan
Cable, Charles Meredith	Mo.	A.B. 1948, Trinity College
A.B. 1942, Southwestern University		M.S. 1950, Catholic University of America
Cable, Joseph Loranza	D.C.	Callander, Ann Deeley
M.S. 1951, Southeastern University		Callander, Donald Bruce
Cabrera, John Emile	D.C.	Callaway, Kenneth Miller
Cabrera, Joseph Michael	Md.	Callon, Janet Ann
A.B. 1951, King's College, Pa.		Callowini, Catherine Jean
Cade, George Newton, Jr.	Va.	Calumetta, George
B.S. 1913, A.M. 1915, University of Arkansas		Calvert, Arthur Keith
Cade, Neil Lewis	D.C.	Calvert, Francis Nelson
B.S. 1950, Davis and Elkins College		A.B. 1951, Howard College
Cadwallader, Gouverneur	Pa.	Camarot, Henry Jules
B.S. 1911, Haverford College		L.I.B. 1951, The George Washington University
Caffrey, Charles Augustine	Pa.	Camarot, Solange Emilienne
A.B. 1952, Wilkes College		Cambasot, Nicholas Michael
Caffrey, James Anthony	Pa.	Cambre, Della Norene
Caffrey, Mary Margaret	Pa.	Camelio, Joseph Albert
Caffrey, William Daniel	N.C.	Cameron, Archie Enos
B.S. 1950, Indiana State Teachers College		B.S. 1941, Ferris Institute
Caflich, Frank Albert	Wis.	Cameron, Barbara Jean
A.B. 1950, The George Washington University		Cameron, Betty Claire
Cafritz, Calvin Robert	D.C.	B.S. 1952, University of Utah
Cafritz, Isobel	D.C.	Cameron, Betty Jean
A.B. 1949, The George Washington University		Cameron, Daniel Edwin
Cahan, Jules Isaac	D.C.	Cameron, Frank Conevery
B.S. 1949, The George Washington University		A.B. 1952, University of Michigan
Cahill, Helen Reilly	D.C.	A.M. 1952, The George Washington University
B.S. 1928, Iowa State College		Cameron, Janet
Cahill, John Joseph	D.C.	Cameron, Montgomery Fly II
Cahoon, Lilian Adelaide	D.C.	Camp, Henry
Cahoon, Lynda Lee	Md.	Camp, Jewell Lorene
Cain, Bernice Jewel	Fla.	Camp, Jo Ann Groser
Cain, Cecile Teresa	Va.	Camp, Warner Hill
A.B. 1925, Davis and Elkins College		B.S. in M.E. and I.E. 1952, University of Alabama
Cain, John Wallace	Md.	Campagna, Ignatius Edward
Cain, William Morris	Ind.	Campana, Ambrose Ralph
Cairns, John Howard	Iowa	A.B. 1942, Pennsylvania State College
Caiazza, Paul Anthony	D.C.	Campbell, Alexander Spotswood
Calbeck, Margaret Anne	D.C.	Campbell, Ann Harwood
Caldwell, Edward Richard	D.C.	Campbell, Anne Barraud
Caldwell, John Boyle	W Va.	Campbell, Beatrice
Calhoun, Alexander Dewey	N.Y.	Campbell, Charles Edward
A.B. 1940, Harvard University		B.E.E. 1949, The George Washington University
Calhoun, James Dean	Md.	Campbell, Charles Edwin
B.S. 1947, Franklin and Marshall College		Campbell, Charles Richard
Ed.M. 1951, Pennsylvania State College		Campbell, Donald Allen
Calhoun, James Robert	Ind.	Campbell, Donald Ritz
B.S. 1948, University of California		B.S. 1951, Rensselaer Polytechnic Institute
Calhoun, Margaret D.	Va.	Campbell, Francis Myrl
A.B. 1927, Birmingham Southern College		B.S. 1949, Indiana State Teachers College
A.M. 1952, George Peabody College for Teachers		A.M. 1951, The George Washington University
Calhoun, Richard Brown	N.Y.	Campbell, Harry Lee
Calhoun, Thomas Boylan	D.C.	B.S. in M.E. 1917, Michigan State College
Calhoun, William Harper	W Va.	Campbell, Howard Fletcher
Calhoun, Peter	Pa.	Campbell, Ian Philip
A.B. 1951, West Liberty State College		Campbell, James Forrest
Callaghan, Frances Goddard	D.C.	B.S. 1948, Pennsylvania State Teachers College
Callahan, Howard Curtis	D.C.	Lock Haven
Callahan, John Joseph	Pa.	Campbell, John Eames
Callahan, Kevin Dennis	D.C.	Campbell, Margaret Elizabeth
		A.B. 1952, The George Washington University
		Campbell, Patricia
		Campbell, Robert Alexander, Jr.

Students Registered

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Campbell, Sheila Elizabeth	D.C.	Carlson, Herbert Donald	Md.
Campbell, William Arthur, Jr.	D.C.	Carlson, Howard Kenneth	Md.
Campbell, William Les	Mo.	A.B. 1949, The George Washington University	
Campbell, William Walker	Va.	Carlson, James Leroy	Ill.
Campbell, William Wallace III	Conn.	Carlson, Loren Merle	S.D.
Campesano, Fred Mario	Va.	A.B. 1948, Yankton College	
Campesano, Clelia Edith	Panama	M.S. 1952, University of Wisconsin	
B.S. in Pharm. 1951, Howard College		Carlson, Maryjo Suverkrup	Va.
Camus, Shirley Ann	Md.	A.B. 1948, The George Washington University	
Canada, Alyce Florence	Va.	Carlson, Paul Earle	D.C.
Canada, Donald William	Ill.	A.B. 1951, Stanford University	
B.S. 1951, University of Maryland		Carlton, Harry Nelson	Md.
Canada, William James	N.Y.	B.S. 1949, M.S. 1950, The George Washington University	
B.S. 1949, Fordham University		Carmack, Newman Clay	Md.
M.S. 1953, The George Washington University		Carmann, Ernest Day	Calif.
Canalat, Everett Daniel	Ky.	A.B. 1944, University of Southern California	
Canas, Albert B.	N.J.	A.M. 1949, Stanford University	
Cangemi, Mario Francis	N.Y.	Dr. es Sci. Pol. 1950, University of Geneva, Switzerland	
B.Ch.E. 1950, Georgia Institute of Technology		Carman, Frank Harrison	Md.
Cannaday, John Egerton, Jr.	W. Va.	Carman, Hazelman	Calif.
Cannon, Don Allen	Va.	Carmody, Harry Thomas	Md.
Cannon, John Andrew	Md.	Carnahan, Melvin Eugene	Mo.
L.L.B. 1949, B.C.S. 1943, B.S. 1945, Southeastern University		Carnaud, Charles Wendell, Jr.	Va.
Cannon, Shirley Louise	Va.	Carnaud, Robert Boyd	Va.
Canner, Terry Wells	Va.	Carnivale, Caroline	N.Y.
Cannon, Jerome Wolf	N.Y.	Carol, Sibil Phyllis	N.Y.
Cannon, Neil Jay	D.C.	A.B. 1951, The George Washington University	
Cantrell, Carl Maurice	Ala.	Caron, Anna Mae	Ohio
Cantrell, Joe Randle	Miss.	Casarella, Rosemary Janet	D.C.
Capel, Marie Watkins	Va.	Carpenter, Beatie Catherine	Va.
Caplan, Clifford William	D.C.	B.S. 1943, University of Virginia	
Capodisano, Carlo B.	D.C.	Carpenter, Jean Anne	D.C.
Capone, John A.	Conn.	Carpenter, Woodward Benoit	Texas
Capone, Ariatide	N.Y.	B.S. 1949, East Texas State Teachers College	
Capp, John Walter	N.J.	Carpenter, Crystal Marie	Va.
B.E.E. 1950, The George Washington University		Carpus, Mammel	D.C.
Caputo, Giovanni	N.Y.	Carr, Charles Richards	N.Y.
Caraculo, Francis Samuel	D.C.	A.B. 1948, A.M. 1950, Columbia University	
A.B. 1952, The George Washington University		Carr, Clifford C., Jr.	N.Y.
Carr, Frank Louis	Va.	B.S. 1950, University of Pennsylvania	
Carballo, Caridad Mercedes	Dominican Republic	Carr, Edward Donlea	D.C.
Carbonell, Maria Lourdes	Venezuela	Carr, Eugene Edmund	Utah
Carbonell, Mario	D.C.	A.B. 1951, University of Utah	
Casiano, Ferdinand Sebastian	Md.	Carr, Gwen Breden Laverne	Va.
B.S. in P.E. 1952, The George Washington University		A.B. 1952, San Diego State College	
Carlson, Ernesto Ferreira	D.C.	Carr, Ira Thornton	Miss.
Carlson, Hugo Joseph	D.C.	Carr, Kenneth Moore	Va.
Carly, George Joseph	D.C.	B.S. 1952, Randolph Macon College	
Carey, William Raymond	Wash.	Carr, Lawrence Edward, Jr.	Md.
A.B. 1951, State College of Washington		B.S. 1948, L.L.B. 1949, University of Notre Dame	
Carlin, Thomas Anthony	Conn.	Carr, Maurice Elizabeth	Ala.
Carl, Edward Franklin	Md.	Carr, Patrick James	Mich.
Carl, Marvin Herschell	Mo.	A.B. 1951, Catholic University of America	
B.S. in Chem. Eng. 1938, University of Missouri		Carr, Thomas Lawrence	Pa.
Carl, John Francis	Pa.	A.B. 1949, Duke University	
Carlisle, Patricia Anne	D.C.	Carr, William Ellsworth	Md.
Carlisle, Russell Edwin	Fla.	Carr, William Floyd	Md.
Carlson, Dorothy Sandison	Md.	B.S. 1949, Furman University	
B.S. 1946, Northwest Missouri State College		Carriere, Gladys Alveen	D.C.
Carlson, Edith Isabel	Calif.	Carroll, Bess Bella	D.C.
Carlson, Harold Gustav	Oreg.	A.B. 1943, Brooklyn College	
B.S. 1940, U. S. Naval Academy		Carroll, Jean Elizabeth	Va.
		Carroll, Joel	D.C.

Carroll, John Hugh	Mass.	Cassidy, Lewis Cochran	D.C.
A.B. 1947, Providence College		Cassidy, Robert Charles	D.C.
A.M. 1952, Georgetown University		A.B. 1949, St. Vincent's College	D.C.
Carroll, John Patrick	Va.	Cassidy, Sally Ann	
A.B. 1944, Cornell University		A.B. 1950, The George Washington University	D.C.
LL.B. 1949, Harvard University		Cassidy, Thomas James	Ma.
Carroll, Mary Josephine	Tenn.	Cassidy, William Edgar	D.C.
A.B. 1931, Maryville College		Cassio, Wedad George	Utah
A.M. in Govt. 1948, The George Washington University		Cassidy, Donn Edward	
Carroll, Neil Louis, Jr.	D.C.	A.B. 1950, The George Washington University	D.C.
Carroll, Richard Lynn	D.C.	Cassola, Armando Levy	England
Carson, Donna Jane	Mich.	Cassuto, Liana	D.C.
Carson, James Cooke	Va.	Castagnola, Robert Louis	
A.B. 1948, Emory University		B.S. 1951, Boston College	D.C.
Carter, Edward Nelson	Va.	Castaneda, Concepcion Esther	
Carter, Elise Barnhill	Fla.	Ph.D. 1931, Havana University	Arg.
B.S. 1930, Florida State University		Castel, Beryl David	
Carter, Ethel Robinson	Va.	A.B. 1935, University of Texas	
B.S. 1949, Madison College		M.D. 1941, Harvard University	
Carter, Francis Montgomery	D.C.	M.P.H. 1940, Johns Hopkins University	Colombia
Carter, Frederic Lee	N.Y.	Castellanos, Luis	D.C.
A.B. 1951, Catholic University of America		Castellanos, Luis Antonio	Ill.
Carter, Helen Louise	Va.	Castillo, Edmund Luis	
Carter, Janet Gordon	D.C.	B.S. 1945, Northwestern University	Nicaragua
Carter, Joe Sidney	La.	Castillo, Jose Maria	
B.S. 1952, Louisiana Polytechnic Institute		A.B. 1948, The George Washington University	Va.
Carter, Lionel Turner	D.C.	Castleman, Jacob Israel	
Carter, Myrtle Helen	Va.	B.S. 1935, Massachusetts Institute of Technology	Va.
Carter, Thelma May	Va.	Caswell, Adele Lambert	Va.
Carter, Thomas Nelson	D.C.	Caswell, Carol Patricia	Md.
B.S. 1951, American University		Catino, Edward Alexander	Va.
Carter, Virginia Burrell	D.C.	Catoe, Christopher	D.C.
Carter, Winfred Otis	D.C.	Cattell, Betty Ruth	
Carteret, George Minor Louis	D.C.	A.B. 1950, University of Kansas	Iowa
Carter, Jeanne Audrey	Md.	Catterall, Logan Virgil	Texas
Cartman, Constance Pauline	N.Y.	Caulble, Lawrence Myers	D.C.
Cartwright, Donald Francis	D.C.	Caulfield, James Alan	D.C.
Caruso, Lawrence Robert	N.J.	Caulfield, Donald John	
A.B. 1940, LL.B. 1950, The George Washington University		A.B. 1951, The George Washington University	Va.
Caruthers, Lawrence Woolf	Ariz.	Cavagrotti, Victor John	D.C.
A.B. 1942, LL.B. 1942, University of Alabama		Cavaller, Dorothy Michael	N.Y.
Carvillas, Jennie Nickle	D.C.	Cavallaro, Vilma Antoinette	
Carvillas, Perry	D.C.	A.B. 1952, The George Washington University	Pa.
Carver, Morelle W.	Va.	Cavanaugh, Penny Ann	Pa.
Carwell, Joseph	D.C.	A.B. 1951, Seton Hill College	
A.B. 1935, New York University		Caveny, Carolyn Frances	
A.M. 1950, Columbia University		A.B. 1951, Pennsylvania State College	D.C.
Casale, John Peter	Calif.	Cebollero, Manuel	D.C.
Casas, Antonio	Venezuela	Cederstrand, Carl Nelson	Md.
Casavant, Raymond Andrew	R.I.	Coalla, Roland Peter	N.Y.
Casey, Ann D.	Oreg.	Cerf, Fred Robert	
Casey, Irving John	N.Y.	A.B. 1940, New York University	D.C.
A.B. 1946, Brown University		Cerick, Peter Aull	Pa.
Casey, James Edward	Va.	Cerny, Raisa	D.C.
Casey, John Hugh	Va.	Coruzzi, Antonette M.	D.C.
Casey, John Joseph	Pa.	Ceruzzi, Madlyn Lucille	
Cash, Charles Owen	Va.	Cervantes, Robert Martin	
Caslin, Richard Leo	Va.	A.B. 1949, A.M. 1952, The George Washington University	D.C.
B.A.E. 1946, B.M.E. 1947, The Catholic University of America		Chaconas, Frances	D.C.
LL.B. 1952, Georgetown University	D.C.	Chad, Seymour Walter	D.C.
Catonova, Arturo Ynocencia III	N.Y.	A.B. 1948, University of California at Los Angeles	D.C.
Cass, Nathan		Chadbourne, John Warren	
B.F.E. 1952, New York University			
Cassell, William Jonathan	Va.		
A.B. 1941, Ed.M. 1950, University of Buffalo			
Cassetta, Salvatore Francis	D.C.		
LL.B. 1951, San Jose State College			

Chadwell, Edward Andrew A.B. 1942, Columbia University	D.C.	Charlesworth, Stuart McRae B.S. in M.E. 1946, University of North Dakota	Va.
Chadwick, William Edward Chae Yonsaek	Va.	M.S. in P.A. 1951, Ohio State University	Korea
Chaffin Susan Pendleton Chaffin, Horace W.	Va.	Charlick, Carl	N.Y.
Chafetz, Joan Marilyn B.S. 1951, New York University	D.C.	Charlton, John George LL.B. 1948, University of Baltimore	D.C.
Chamberlain, Margaret Mary Chamberlain, Guy Wadsworth, Jr.	D.C.	Charlwood, Patricia Gale	Va.
B.S. 1950, Washington and Lee University	D.C.	Charlwood, Reginald Edward	Va.
Chamberlin, Thomas Barrett Chambers, Arthur W., Jr.	Va.	Charubas, James John	D.C.
A.B. 1949, LL.B. 1942, Yale University	Conn.	Chase, Adeline Clo	D.C.
Chambers, Doris Ross B.S. 1950, Wilson Teachers College	D.C.	Chase, Daniel Franklin, Jr. B.S. 1951, University of Maryland	Md.
Chambers, Edward Francis Chambers, Patricia Lee	Pa.	Chase, Kathrine Safford A.B. 1950, Radcliffe College	Conn.
Chambreau, Dolores Jean Clampion Marvin Ashbury	D.C.	A.M. 1952, University of Virginia	
B.S. 1944, Alabama Polytechnic Institute	Ala.	Chase, Roland Hamilton	Md.
Chan, Dorothy May Chance, Anthony Nicholas	D.C.	Chasnov, Bernard B.S. 1940, M.S. 1940, College of the City of New York	Va.
Chandler, Arthur Warren Chandler, Harold Haislip	N.I.	Chasson, Jacob B. B.S. 1939, College of the City of New York	D.C.
A.B. 1944, Western Maryland College	D.C.	A.M. 1949, The George Washington University	
Chandler, Herbert George Chandler, Joseph Merritt, Jr.	Md.	Chatelan, Diane Louise	Va.
Chaney, Albert Lou, Jr.	Va.	Chardin, Gerald Morris	D.C.
Chaney, Clarence Melvin A.B. 1940, Catholic University of America	Md.	Chattinuck, Mary Lee	W.Va.
M.S. 1950, The George Washington University	Oreg.	Chattinuck, Stephen	N.Y.
Chaney, John Lester, Jr. Chaney, Tony Mae	D.C.	Chaudoinier, Edna Mae	D.C.
Chaney, Wharmal Womack Chan, Ming Eih	Md.	Chauvenet, Jane B.S. 1949, State Teachers College	D.C.
Channon, Kenneth Frank, Jr. Chapine, Claudia Beeshun	Va.	A.M. 1952, University of Maryland	
Chapman, Allyn Dean Chapman, John Leonard	Md.	Chavez, Maguinito Dell Chavoor, Shirley Theorien	Ga.
Chapman, John Timothy Chapman, K. Kervyn Dawsey	Va.	Chaves, Antonio Handler A.B. 1947, Radcliffe College	Mass.
A.B. in Ed. 1941, The George Washington University	Ga.	Cheesman, George Le Roy	Va.
Chapman, Lyvon Joseph Chapman, William Harold	Wash.	Cheevers, Mary Elizabeth	Md.
B.S. 1941, Davidson College	Md.	Cheevers, Philip Charles A.B. 1940, Manhattan College	N.Y.
Chapper, Frank Morris Chapple, Winifred Goss	D.C.	Chelena, John Edward	N.Y.
A.B. 1930, U. S. Naval Academy	Mont.	Chellman, Lloyd Hamilton, Jr.	Pa.
Charen, Sol A.B. 1915, Western Reserve University	D.C.	Cheng, Hsueh Sheng A.B. 1948, National Tsing Hua University	Va.
A.M. 1938, University of Pittsburgh		Cheong, Chee Pin	China
Chares, Thelma Golden A.B. 1946, Pennsylvania College for Women	Pa.	Chernachun, Paul A.B. 1947, University of Michigan	Malaya
A.M. 1917, University of Pittsburgh		Cherry, Duane Hill	N.Y.
Charles, Cecil Marvin Charles, George James	D.C.	Cherry, Gerald Meeker M.Ed. 1940, University of Oklahoma	
A.B. 1950, University of Pittsburgh	Pa.	Cherry, Jerome A.B. 1936, Randolph Macon College	Va.
Charlesworth, George Herbert A.B. 1938, Houshoun College	Pa.	A.M. 1952, The George Washington University	
A.M. 1947, University of California at Los Angeles	Md.	Cherry, John Clayton, Jr.	Va.
		Chestall, Mitchell	N.Y.
		Chesnak, John B.S. in E.E. 1914, Carnegie Institute of Technology	D.C.
		M.S. in Ed. 1946, University of Pittsburgh	
		Chesnak, William Aloysius	Pa.
		Chester, Lillian Lorene B.S. 1940, University of South Dakota	N.C.
		Chesley, Edward Joseph	D.C.
		Chester, Annabelle Julianne	Calif.
		Chestnut, Warren Lynwood	D.C.
		Chevrier, Louis B.S. 1950, American University	D.C.

Chicherno, Joseph Charles	Md.	Christie, Peter	Mass.
B.S. 1938, Georgetown University		Christy, Lowell Francis	Ind.
Chwo, Antoni M., Jr.	Ariz.	B.S. in F.S. 1950, Georgetown University	D.C.
Chen, Tzu-tung	D.C.	Chrysakis, Joseph	N.Y.
A.B. 1947, Catholic University of China		A.B. 1951, The George Washington University	Va.
Child, Daniel Keigwin	Md.	Chu, Euclid	D.C.
Child, James Robert	Va.	Chudzik, Adeline Celia	D.C.
A.B. 1940, Princeton University		Chun, George Masami	D.C.
A.M. 1950, University of Pennsylvania		Chung, Josephine Yu-Hsiao	Md.
Childers, Herman Malcolm	D.C.	Church, Lloyd Eugene	
B.S. 1950, University of Maryland		A.B. 1943, West Virginia University	
Childress, Harry Brownlow	D.C.	D.D.S. 1944, University of Maryland	
A.B. 1932, St. Johns College		M.S. 1951, The George Washington University	D.C.
Childress, Richard Leo	N.Y.	Chyatte, Eli Isaac	Pa.
A.B. 1950, The George Washington University		A.B. 1951, University of Maryland	N.J.
A.M. 1951, Fletcher School of Law and Diplomacy		Cianciosi, Caesar A.	N.J.
Chilton, Monroe Ira	N.Y.	B.S. 1952, Villanova College	
Ching, Donald Dai Heong	Hawaii	Ciarrocca, Louis, Jr.	D.C.
A.B. 1950, University of Hawaii		Ciavarra, Vincent Alexander	
Chiu, Ruby	Calif.	B.S. 1952, The George Washington University	D.C.
Chipman, Harold Eugene	D.C.	Cica, Stephen	N.J.
B.S. in F.S. 1951, Georgetown University		M.L. 1938, University of Belgrade	Pa.
Chisholm, Herbert Bones	Va.	J.D. 1941, University of Rome	
A.B. 1948, Williams College		Cienniecki, Leonard Francis	N.Y.
A.M. 1950, Boston University		Cierebiej, Albert	
Chisholm, James Alfred	N.Y.	A.B. 1952, Washington and Jefferson College	N.Y.
Chism, Robert Loran	Md.	Cina, Saverio Joseph	Va.
Chocola, Paul Wayne	Pa.	B.S. 1951, University of Michigan	
Choi, Sang Ryun	D.C.	Cinciripini, Dominick	D.C.
A.B. 1951, Monmouth College		B.S. 1950, University of Pittsburgh	D.C.
Choisner, Roger Morrison	D.C.	Ciriello, Basil L.	
Chon, Phillip Lin	D.C.	Ciuna, Frances Lathrop	D.C.
Chopra, Lalit Kumar	D.C.	B.S. 1950, A.M. 1952, The George Washington University	D.C.
Chutson, Allan Isadore	Md.	Cineros, Manuel Rodriguez	D.C.
A.B. 1947, Pennsylvania State College		Claffy, Kathleen Helen	D.C.
A.M. 1941, University of Pittsburgh		B.E.E. 1948, University of Minnesota	Md.
Choumenkovitch, Milena Mia	D.C.	Clagett, Charles Lee	N.Y.
Chovinard, Edward L.	Md.	Claiborn, Harold Glenn	Va.
A.B. 1939, University of Montana		Clancy, Philip Christopher	D.C.
Chow, Dong Lin	D.C.	Clanton, Samuel Macon, Jr.	Va.
Chowenhill, Charles Frampton	D.C.	Clark, Barbara Anne	Iowa
Chownes, William H. P.	N.Y.	Clark, Benjamin Nathan, Jr.	D.C.
M.E. 1941, Stevens Institute of Technology		Clark, Charles Henry	
Chramiec, Alexandra Wanda	Va.	Clark, David Pool	D.C.
A.M. 1940, The George Washington University		A.B. 1951, University of Michigan	D.C.
Chramiec, Mark Andrew	Va.	Clark, David Sherman	Va.
Chreitzberg, Janice Anell	D.C.	Clark, Doris Ridpath	
A.B. 1947, Western Maryland College		Clark, Ernest Burrell	Va.
Christen, Clare Maria	D.C.	B.S. 1949, West Virginia Wesleyan College	Va.
Christensen, Clarence Peter	Md.	Clark, George Ordway	Ark.
Christensen, Earl	Va.	Clark, James Walter	Md.
A.B. 1941, Montana State University		Clark, Janet D.	Calif.
Christensen, Ellen Elizabeth	Va.	Clark, Janie Katherine	D.C.
Christensen, Genevieve Mary	Md.	A.B. 1944, Barnard College	
Christian, Leonard Darold	Okla.	Clark, Kathryn Orpha	
B.M.E. 1950, The George Washington University		A.B. 1947, University of Washington	Minn.
Christiansen, Fred Kjargaard	Md.	A.M. 1951, University of Minnesota	D.C.
B.S. 1937, Midland College		Clark, Lowell Dean	Md.
Christiansen, James Richard	Mich.	Clark, Malcolm Cameron	Md.
B.S.E. 1950, University of Michigan		Clark, Marilyn June	Minn.
Christiansen, Jennifer Jean	Va.	Clark, Mary Alice	
B.S. 1950, University of Illinois		Clark, Miles Morton	D.C.
Christensen, Robert	Ill.	A.B. 1941, Macalester College	Va.
B.S. 1950, University of Illinois		Clark, Penny McAlister	
		Clark, Quentin Albert	

Clark, Raymond Dykes BS 1948, University of California at Los Angeles	Va.	Cline, Toney E. A.B. 1947, Concord College	W. Va.
Clark, Robert Elliot, Jr. A.B. 1950, Dickinson College	Del.	Clinger, Julia Whitla Clinston, Wilma May	Pa. N.Y.
Clark, Robert Francis	D.C.	Clipp, Gertrude Nelson	Va.
Clark, Robert I. Ellis	Md.	Clipp, Louis Leighton	D.C.
Clark, Sally Catty	D.C.	Clusath, Patricia Anne	Va.
Clark, Sarah S.	Pa.	Cloe, William Weedon, Jr.	Va.
Clark, Victoria Chappel BS in Ed. 1949, Columbia Univ.	D.C.	Cloe, William Weedon, Jr. A.B. 1940, College of William and Mary	N.I. Md.
Clark, Victoria Prescott	Md.	Clove, David Olaf	N.I.
Clarke, Addison BS 1952, The George Washington University	Md.	Clood, Albert Morgan, Jr.	Md.
Clarke, Emma Duval	Va.	Clubb, Tringe Moore BS 1941, Southeast Missouri State College	Md.
Clarke, James Brent	D.C.	Cluff, Norman Albert	N.H.
Clarke, Lewis Lyman	Va.	Clove, James Maurice BS 1944, U. S. Naval Academy	N.Y.
Clarke, Louise Axel	Md.	Coakley, Eleanor M.	Ohio
Clark, Roy Clayton, Jr. A.B. 1949, Cornell University	Md.	Coates, Elizabeth Ann Coates, Ruth Jean	Ind. D.C.
Clark, Thacher A.B. 1949, Swarthmore College	Conn.	Cobb, Alan Palmer	D.C.
Clarkson, Douglas Marvin B.F.E. 1950, Cornell University	Md.	Cobb, Charles David	N.C.
Clark, Matthew Adam, Jr. BS 1951, University of Maryland	Texas	Cobb, Doris Bennett A.B. 1942, The George Washington University	Ala.
Clayton, Evelyn Bills BS 1945, University of Illinois	Va.	Cobb, Leonard Campbell	Wash.
Clay, Forrest Pierce, Jr. BS 1948, Randolph-Macon College	Va.	Cobb, University of Washington	Md.
Clay, Virginia MS 1950, Ph.D. 1952, University of Virginia	Texas	Coburn, Lloyd Lockett BS 1948, Wisconsin State College, River Falls	Md.
Clay, Franklin Edward B.A.E. 1946, Rensselaer Polytechnic Institute	Texas	Cochran, Clay L. A.B. and A.M. 1918, University of Texas	Md.
Clay, William Holmes BS 1941, Wake Forest College	Md.	Ph.D. 1950, University of North Carolina	Va.
Clayton, Bonnie Wolfe	Va.	Cochran, Dean William	Va.
Cleas, Jeanne Audrey A.B. 1952, The George Washington University	D.C.	BS 1942, University of Southern California	D.C.
Cleaver, John Hubert	D.C.	Cochran, Fred Edward BS in B.A. 1941, Ohio State University	D.C.
Clegg, Glenn Wood	D.C.	LL.B. 1946, St. John's University Law School, N. Y.	Va.
Clement, Michael Davis A.B. 1952, New Jersey State Teachers' College	Va.	Cochran, Gessie Alice	Ohio
AM 1950, Texas Christian University	D.C.	Cochran, Robert Darnow A.B. 1950, Harvard University	D.C.
Clements, Elizabeth Hughes	N.Y.	Cochran, Virginia Lewis A.B. 1929, Berea College	Va.
Clements, Morrison McKenney	D.C.	AM 1945, West Virginia University	Va.
Clements, Cecil Russell	Va.	Cochran, Virginia Dennis	Va.
Clements, Helen Kinney BS 1942, Pennsylvania State Teachers College, Lock Haven	D.C.	Cochrane, Mabel Stead BS 1931, Longwood College	D.C.
Cervantes, French Maves, Jr. A.B. 1954, Emory and Henry College	Va.	Cochran, Thelma Sherwood Cock, Thomas Charles	Calif.
Clerton, Libanisa	Va.	A.B. 1952, The George Washington University	D.C.
Colford, Zita Langhorne	Va.	Cocker, E. Marlene	D.C.
Colford, Marion Butler A.B. 1950, The George Washington University	Tenn.	Coggins, Johnny Adonis	Md.
Clifton, Elizabeth Hope	D.C.	Coffe, Sylvia	D.C.
Compton, Harley Rolley	D.C.	Coe, Clara C. BS 1917, George Peabody College for Teachers	Va.
Conner, Harley Ronald A.B. in Govt. 1949, The George Washington University	Ill.	Coe, Leonard Dayton	N.Y.
Conard, Outten Jones, Jr. B.E. 1952, Johns Hopkins University	D.C.	Coe, M. Fred Hart	Md.
Cline, Barbara Holden	Mass.	Coe, Jean Carolyn	D.C.
		Coffey, James Edward, Jr.	Md.
		Coffey, Carla Ann	D.C.
		Collett, Mary Elizabeth	Pa.

Coffey, Betty Maxine	D.C.	Cole, Arnold Harvey	N.Y.
B.S. 1948, University of Maryland		B.S. 1949, College of the City of New York	Go.
Coffey, Hubert Franklin	Texas	Cole, Charles Alexander, Jr.	Va.
Coffey, Mary Marcia	Wis.	Cole, Charlotte Curtis	Va.
Coffey, Robert Arthur	Md.	Cole, Don William	N.Y.
Coffey, Robert Tuttle	N.C.	A.B. 1952, University of Illinois	D.C.
B.S. 1948, Wake Forest College		Cole, Edna Joan	Kans.
Coffin, Edward Warren	Va.	A.B. 1952, Brooklyn College	
B.S. 1950, University of Maryland	Minn.	Cole, Gary Vance	
Coffin, James Clyde	D.C.	Cole, Grant Hugh	
Cogan, George Winfred	Ill.	A.B. 1947, LL.B. 1949, University of Kansas	Kans.
Coggeshall, Myrtle Edith	Va.	Cole, Marjorie June	
Coghlan, Carmen Billington		A.B. in Govt. 1952, The George Washington University	Md.
A.B. 1940, University of Colorado	N.Y.	Cole, Milton Burns	D.C.
Cogliano, Joseph Albert		A.B. 1952, The George Washington University	
B.S. 1951, Polytechnic Institute of Brooklyn	Va.	Cole, Sally Florence	N.Y.
Cogswell, Patricia Ann	D.C.	B.S. 1951, University of New Hampshire	
Cohen, Alvin	D.C.	Cole, Stanley Z.	Ohio.
Cohen, Arthur Steven	D.C.	B.S. 1949, LL.B. 1952, University of California	Md.
Cohen, Barbara Dorothy	D.C.	Cole, Sylvia Ruth	
Cohen, Clotilda Florence	Pa.	Cole, Victor Bogvild	
A.B. 1952, Wheaton College		B.S. 1958, U. S. Merchant Marine Academy	S.C.
Cohen, Daniel C.	Pa.	M.S. 1934, Massachusetts Institute of Technology	Va.
A.B. 1951, LL.B. 1951, Harvard University		Coleman, Florence Muir	
Cohen, David	Md.	Coleman, George Melchades, Jr.	
Cohen, Fave Barbara	D.C.	A.B. in Govt. 1950, The George Washington University	Va.
Cohen, Gerald	N.Y.	Coleman, Horace Wilder III	Va.
Cohen, Joel Harvey	D.C.	A.B. 1952, University of the South	
Cohen, Judith Roberta	D.C.	Coleman, James Edward	D.C.
Cohen, Lee Towers	D.C.	B.S. 1946, U. S. Merchant Marine Academy	
Cohen, Melvin S.		Colevas, Prokopos	Va.
B.S. 1958, Brooklyn College		A.B. 1951, The George Washington University	
A.B. 1940, The George Washington University	D.C.	Collax, Raymond Eugene	D.C.
Cohen, Morris		A.B. 1950, University of California	
A.B. 1949, The George Washington University	Va.	Coll, Robert Wilson	D.C.
Cohen, Norman	D.C.	A.B. 1952, The George Washington University	
Cohen, Norman Sonny	D.C.	Colley, Benjamin Gilbert	D.C.
Cohen, Roger Stabel		B.S. 1948, Union College	D.C.
A.B. 1910, Princeton University		Colley, Shirley Ann	D.C.
M.D. 1924, The George Washington University		Colbe, Norma Ann	Va.
Cohen, Shelton Stanley	Md.	Collier, Clyde Earl	Md.
A.B. 1950, The George Washington University		Collier, Jack Wayne	
Cohen, Stanley	D.C.	Collin, Sidney Raymond	Va.
Cohen, Sydney Gerald	Va.	B.S.E. 1950, Princeton University	
Cohn, Leonard Earl	Md.	Collings, Mary Louise	Miss.
A.B. 1950, The George Washington University		A.B. 1935, Wesleyan College	D.C.
Coker, Morgan Baxter	S.C.	A.M. 1926, Northwestern University	Mass.
B.S. 1952, University of Maryland		Collins, Bertha	
Coker, Robert Harry	Md.	Collins, Dorothy Eva	
Cokock, Sara Frances	D.C.	Collins, Garner Fawcett	
Colangelo, James Michael	Va.	Collins, John Joseph	Mich.
Colarusso, Annamaria	Pa.	A.B. 1940, University of Missouri	
Colaw, Daniel Albert, Jr.	Va.	A.M. 1950, University of Georgia	
A.B. 1946, Shepherd College	Ill.	Collins, John Leroy	Va.
Colb, Rosa Becker	D.C.	A.B. 1950, Michigan State College	
Colbert, Donald Ray	D.C.	Collins, John W.	D.C.
Colbert, Edmund Charles	D.C.	B.S. 1935, Northwestern University	D.C.
Colbert, Robert Chester	Md.	Collins, Joseph	
Colbert, Robert Lee	Va.	Collins, Josephine Hardman	
A.B. 1950, Randolph-Macon College		A.B. 1912, Shorter College	
Colborn, John Andrew III	D.C.		
Colborn, Paul Appleby	D.C.		
A.B. 1952, The George Washington University			
Colclough, Sara Kathleen	Md.		
Cole, Andrew Truman	Va.		

Collins, Kelly B. A.B. 1949, John D. Stetson University	Fla.	Conklin, Harvey Badeau A.B. 1951, Ohio Wesleyan University	D.C.
Collins, Kenneth Claude A.B. 1952, University of Denver	Colo.	Conley, Inez Marie B.S. 1916, M.S. 1930, Oklahoma Agricultural and Mechanical College	D.C.
Collins, Mary Alice A.B. 1951, Michigan State College	D.C.	Conley, Mary Katherine	Va.
Collins, Maurice William	Md.	Conlon, Anna Mae	Md.
Collins, Orlin Milton	Wash.	A.B. 1951, Dunbarton College of the Holy Cross	
Collins, Philip Reilly A.B. 1949, L.L.B. 1942, Loyola University	La.	Conn, Mabel Virginia A.B. 1928, University of Mississippi	D.C.
A.M. 1945, Ph.D. 1950, George- town University		Connell, Eugene Ambrose, Jr. A.B. in Govt. 1951, The George Washington University	Md.
Collins, Veronica May	N.Y.	Connolly, Anna Louise B.S. 1937, Pennsylvania State Teachers College, California	D.C.
Collins, Wallace Eddy	D.C.	Connolly, Edward Ray	D.C.
Collins, William Thomas	Va.	Connolly, John Daniel B.S. 1950, College of the Holy Cross	Md.
Collins, William Timothy A.B. 1948, A.M. 1951, The George Washington University	N.Y.	Conner, Ray Bradford	Va.
Collison, Harold Alton B.S. 1948, University of Michigan	Md.	Connerton, Joseph John B.E.E. 1949, Catholic University of America	Pa.
Colmar, Barbara Jean	Md.	Conniffey, John Francis	Va.
Colcluzin, Martin A.B. 1951, University of California	N.Y.	Connolly, Barbara	D.C.
Colohan, Paul Matthew	D.C.	Connolly, Helen Louise Cumin A.B. 1928, A.M. 1950, The George Washington University	Mass.
Colombo, Louis Robert	Pa.	Connolly, John Stoddard, Jr. Connolly, Mary Teresa A.B. 1951, Emmanuel College	Va.
Colombos, Marina	N.Y.	Connolly, William Stephen	Md.
Colou, Cassette A	D.C.	Connor, Charles David A.B. 1949, East Carolina Teachers College	Md.
Coloutoun, James Devitt B.S. 1940, Franklin and Marshall College	Pa.	Connor, Louis Milton B.S. 1940, Maryland State Teachers College, Frederick Ed.M. 1947, University of Maryland	Va.
Colson, Carol Ann Colter, Stanley, Jr. A.B. 1952, Syracuse University	D.C.	Connor, Rosemary Mahoney A.B. 1950, San Diego State College	Md.
Colson, Stephen Anthony	N.Y.	Conroy, James Joseph III A.B. 1952, The George Washington University	Va.
Colson, Adrienne D.	N.Y.	Conte, Patrick John Conte, John William A.B. 1951, Bowdoin College	Maine
Combs, David Dale	D.C.	Continetti, Frank Edward	Va.
Comeau, Paul Theodore A.B. 1949, Assumption College	Va.	Conway, Bryant Wayland Conway, Claire McCann B.S. 1941, Pennsylvania State Teachers College, East Stroudsburg	Va.
Comiskey, Emmett Jerome B.S. in F.S. 1949, Georgetown University	Mass.	Conway, James Norman Conway, Margaret Mary A.B. 1944, Marywood College L.L.B. 1952, Catholic University of America	D.C.
Compton, John Richard Compton, Norma Haynes A.B. 1950, The George Washington University	Ill.	Conwell, Emma Mary Conzelman, Gaylord Maurice B.S. 1947, Idaho State College	Pa.
Comstock, Alice May B.S. and A.M. 1942, Columbia University	Va.	Cook, Audrey Farnshaw Cook, Charles David Cook, Frances Rowena A.B. 1952, The George Washington University	Calif.
Comstock, Elizabeth Singellton Comulada, Gloria Marie B.S. 1946, University of Virginia M.S. 1948, The George Washington University	D.C.	Cook, Francis Kemmet Cook, Harriet Bonducat A.B. 1936, Middlebury College	Md.
Comulada, John Raymond	Puerto Rico	Cook, Helen Acker Cook, Jesse Strother III	Ga.
Comulada, Manuel	Md.		D.C.
Comulada, Manjel Paul B.S. 1941, University of Maryland L.L.B. 1950, The George Washington University	Md.		N.H.
Conant, Robert Charlton A.B. 1951, The George Washington University	Hawaii		D.C.
Conason, Thomas A. Conason, Emanuel Voltaire A.B. 1951, The George Washington University	Va.		Md.
Concarson, Richard James Conde, Katherine Broderick Condon, Joan Marshall Condon, Robert Potter	N.Y. R.I. D.C. Wash.		

Cook, John Mason	Va.	Copeland, Velma Myrl	Va.
Cook, Leita Anne	Ark.	B.S. 1932, Southwest Missouri State College	
Cook, Martha Eljean	Va.	A.M. 1941, Washington University	Canada
Cook, Maryjane Katherine	Va.	Copes van Hasselt, Roelof Hendrik Albert	N.Y.
B.S. 1949, College of William and Mary		Copley, Douglas Martin	Iowa
M.S. 1952, The George Washington University		A.B. 1950, Syracuse University	Md.
Cook, Richard Selon	Va.	Copley, Richard Eldridge	N.Y.
B.S. in F.S. 1951, Georgetown University		Copley, William Gordon	
Cook, Wendell Burnham, Jr.	Conn.	Coppel, Arthur	D.C.
Cooke, Isabelle Elizabeth	Va.	A.B. 1949, University of Virginia	
Cooks, Edward Andrew	Va.	Copperman, Howard Robert	
Cooley, Ray Nelson, Jr.	Va.	A.B. in Govt. 1952, The George Washington University	Calif.
Cooley, Ruth Ann	Okla.	Coppersmith, Earl Wayne	Md.
A.B. 1951, Phillips University		Copsey, Jesse Fabian	Calif.
Cooley, William Collier	Md.	Coram, Frank John	N.Y.
B.S. 1950, University of Maryland		A.B. 1950, San Diego State College	
Coomba, Richard Arthur	Mich.	Corbin, Douglas Tenny	Ill.
Coon, Elvin Ralph, Jr.	W. Va.	B.S. 1950, St. Lawrence University	Wis.
B.S. 1946, University of Michigan		Corby, Richard Andrew	
Coonan, Thomas Joseph	Md.	Corcoran, Catherine Margaret	D.C.
A.B. 1950, A.M. 1952, University of Maryland		B.S. 1948, University of Wisconsin	Mass.
Cooney, Allan S.	Vt.	Corcoran, Donald Gerald	
A.B. 1943, Ohio State University		Corcoran, John Myatt	D.C.
Cooney, Robert Brendan	N.J.	L.L.B. 1941, Northwestern University	
A.B. 1951, Antioch College		Corcoran, Joseph Reginald	
Coopchik, Naomi Sharon	N.Y.	A.B. 1951, Catholic University of America	Calif.
Cooper, Alan Irving	D.C.	Cordell, John Wilbur	D.C.
Cooper, Anna Marie	Pa.	Cordom, Damon Nicholas	Va.
Cooper, Barbara Jean	Va.	Cordua, Alex Michael	
Cooper, Boyd	Wash.	Corey, Alexander	Calif.
Cooper, Eli	D.C.	A.B. 1938, Harvard University	Va.
Cooper, Emmett Monroe	Md.	Corey, Celia	
Cooper, George Honess	N.Y.	Corey, William Robert	Md.
B.M.E. 1951, The George Washington University		A.B. 1948, Syracuse University	Fla.
Cooper, Harrison Lee	D.C.	Corkran, Francis Liske	D.C.
Cooper, Jack Ross	Md.	Cormack, John Galbraith	Va.
A.B. 1948, Queens University, Canada		Cornelius, Kenneth Thompson	D.C.
A.M. 1952, The George Washington University		Cornell, Walter Aden	
Cooper, Joseph Emerson	Va.	Cornwell, Ernest Roy	
A.B. 1938, Indiana University		Cornwell, George Gilbert, Jr.	Polytechnic
Cooper, Larry Allen	Ohio	C.E. 1936, Rensselaer Institute	Va.
Cooper, Paul David	Md.	Corona, Paul John	D.C.
A.B. 1938, Western Maryland College		Corrigan, Anne Mary	D.C.
Ed.M. 1942, University of Maryland		Corsenil, Jose Floriano	Miss.
Cooper, Richard Andrew	Calif.	Cosgriff, John Edward	Va.
Cooper, Roberts Shirley	D.C.	Cosgrove, Patricia Avis	Md.
Cooper, Samuel	Md.	A.B. 1940, Middlebury College	Pa.
B.S. in Ed. 1936, College of the City of New York		Cosgrove, Thomas Edward	D.C.
L.L.B. 1938, J.S.D. 1950, St. John's University		Coss, Paul Eugene	Puerto Rico
A.B. 1951, Johns Hopkins University		Costanzo, Felix	
Cooper, Thomas Schane	D.C.	Costas, Raul, Jr.	Maine
Coover, Mullen Ogile	W. Va.	B.S. 1949, Villanova College	Va.
A.B. 1942, Shepherd College		Costello, Bartley Alexander	
M.S. 1947, University of West Virginia		Costello, John Henry, Jr.	Calif.
Copans, Daniel John	Va.	A.B. 1940, University of Cincinnati	
A.B. 1951, Union College		Costello, Richard Edward	
Cope, Estelle Meyer	D.C.	L.L.B. 1934, University of California	D.C.
Cope, William Willard	D.C.	L.L.M. 1948, The George Washington University	Mass.
		Costelloe, A. M. Valerie	Md.
		Cotin, John Peter, Jr.	D.C.
		Cotinett, John Henry	D.C.
		Cotinett, Margaret Anna	Va.
		Cotten, Rebecca Anne	D.C.
		Cotter, George Roland	
		Cottrell, Alfred Charles	
		B.S. 1951, University of Maryland	

Coble, Alexander John B.S. 1919, U. S. Naval Academy	Va.	Cragin, Georgia Marshall Cragoe, John Henry	Mo. D.C.
Cochran, John Bernard Coffman, Paul Markin, Jr. B.S. 1951, University of Maryland	Md.	A.B. in Govt. 1950, The George Washington University	
Coulter, Elizabeth Clarke A.B. 1937, Stanford University	Va.	Craig, Albert Gallatin, Jr. B.S. in M.E. 1947, University of Kentucky	Va.
Coulter, Patricia Florence A.B. 1942, University of Chicago		Craig, Carl Edward A.B. 1947, Washington Missionary College	Ohio
Couttrap, Susan Ann Coulter, Mabel Harriet	Mich.	Craig, Clifton Morton, Jr. B.S. 1939, University of North Carolina	N.C.
Cowan, William Paul Cowan, Charles	D.C. D.C.	Craig, George Arthur Craig, Lois Ashor Craig, Louis G.	Va. Conn. W. Va.
Cowan, Thomas Anderson A.B. 1951, Washington and Lee University	Ky.	A.B. 1952, West Virginia University	
Court, Constantine Courtney, Arch Leroy	D.C.	Craig, Pamela Fitzgerald A.B. 1952, Rollins College	Pa.
Courtney, Joseph Clarence III A.B. 1944, Shepherd College	Okla. Md.	Craig, Peter Noel Craige, James New Craigo, Joan Constance	N.Y. N.Y. Mass.
Courtney, Marion Lee Cous, Alphonse Paul	Pa.	Craig, J. Wendell B.S. 1941, Northwestern University	D.C.
Cous, Sam Joseph Cousins, Joan Lee	Mass.	A.M. 1947, Harvard University	
Cousins, Ruth Hubbard Covillion, Benson S.	Mass. D.C.	Craig, Joseph Robert Craige, Edward Shelton	Va. Va.
Cox, John Frederick A.B. 1952, Merrimack College	Calif.	Crandell, William Delacroix Crandell, Ralph Frederick	Va. Va.
Cox, Louise Mary Cox, Maurice Clyde	D.C.	B.C.E. 1951, M.Ch.E. 1952, Rensselaer Polytechnic Institute	
Cox, Fred Fletcher Cox, Richard John	Calif. D.C.	Crandell, William Palmer Crane, Bradley Caldwell	Md. Mo.
Cox, Daniel Couch Cox, Anna Bush	Pa. Texas	B.S. 1952, Agricultural and Mechanical College of Texas	
Cox, Robinson Harris A.M. 1950, George Peabody College for Teachers	N.C. Tenn.	Crane, Harold Elroy, Jr. Crane, Mandalee Bishop A.B. 1945, Vassar College	D.C. D.C.
Cox, Patricia Jeannette Cox, Floyd Kent	N.Y. Pa.	Cranford, James Edward Crank, Terrell Harvey	Md. Va.
Cox, Louis Gordon Cox, Mary Lorena	Va. Ark.	Crankshaw, Harold George B.S. 1925, Carnegie Institute of Technology	D.C.
Cox, Porter Burke Cox, Robert Conway	Va. Md.	A.M. 1952, Cornell University	
Cox, Thomas Edwards Cox, Virginia Olivia	Va. W. Va.	Crankshaw, James Carpenter B.S. 1952, University of Rhode Island	R.I.
Cox, William H. Cox, William I. Denison University	Fla.	Craven, Conrad Winfield Craven, John Pinna	Hawaii D.C.
Cox, Malcolm Lee A.B. 1948, A.M. 1949, State University of Iowa	D.C. Iowa	B.S. in C.E. 1946, Cornell University M.S. in C.E. 1947, California Institute of Technology Ph.D. 1951, University of Iowa	
Cox, Lucile Fane Cox, Charles Frank	Va.	Craven, Patty N. Craw, Stanislaus Austin	Texas D.C.
Cox, Daniel Kennedy A.B. 1942, Swarthmore College	Tenn. D.C.	Crawford, Armon Davis Aheson B.S. 1950, U. S. Naval Academy	Md.
Cox, James Joseph A.B. 1948, The George Washington University	Mont.	Crawford, Howard Edwin Crawford, John George, Jr.	Iowa N.C.
Cox, Joseph Patrick Cox, Roger D.	Md.	B.S. 1950, High Point College Crawford, Louise Zimmer	D.C.
Cox, Robert Herman Cox, William Wood	Va. Idaho	B.S. 1951, Miami University Crawford, Mildred Albenzimbie	D.C.
Cox, Clara Reaith A.B. 1952, The George Washington University	Md. D.C.	Crawford, Rachel Louise Crawford, Thomas Michael	Ala. Ohio
Craft, Robert Wayne A.B. 1952, The George Washington University	D.C.	A.B. 1950, Ohio State University Crawford, Van Leroy, Jr.	Va.
Craft, Paul Arthur B.M.E. 1944, College of the City of New York	D.C.	Creamer, Paul James Crech, Basil Murray	D.C. D.C.
M.S. 1950, University of Maryland		Crech, Maude Mae B.S. 1950, Northwestern University	D.C.

Creech, William Ayden	D.C.	Crowley, Francis Joseph	Va
A.B. 1948, University of North Carolina		B.S. 1948, Norwich University	Tenn
Crehore, John Davenport III	D.C.	Crowley, James Worthington	D.C.
Crenca, James John	D.C.	A.B. 1950, The George Washington University	D.C.
Cresswell, Edward Rowland	D.C.	Crowley, John William	D.C.
Cresthull, Esther	D.C.	A.B. 1939, College of the City of New York	N.Y.
Creswell, Richard Nicholas	Md.	Crowley, Mildred Frances	N.Y.
Creswell, Thomas Jefferson	D.C.	Crowley, Thomas Michael Joseph	Idaho
Crevelling, Cyrus Robbins	Ill.	Crown, Jean Ann	
Cribb, Vance Newton	Va.	Crowther, James Wesley	
Crickenberger, Ira Jethro		B.S. 1952, Utah State Agricultural College	Ky
B.F.E. 1952, The George Washington University		Crum, Johnny Excell	Va
Cridder, James John	D.C.	Crumley, Howard Lee	D.C.
Crigler, John Frederick	Ind.	Crumly, Howard William	D.C.
Crim, Howell Gardner, Jr.	Va.	Crumly, Vivien Muriel	D.C.
Crimmins, John Joseph	Va.	Crummett, John David	
Crisan, George	D.C.	A.B. 1952, The George Washington University	N.C.
B.D. 1952, Colgate-Rochester Divinity School		Crumpler, Roland	N.Y.
Crist, Robert Hollis	Va	Crupain, Eli N.	Md.
B.S. in Ed. 1951, Pennsylvania State Teachers College, Lock Haven		A.B. 1940, Brooklyn College	
Cristobal, Lourdes S.	D.C.	Crutcher, Harold Lee	
Criswell, Howard Donald	D.C.	A.B. 1951, B.S. 1954, Southeastern State College	Va
Crocharell, James Brandon	Va	M.S. 1951, New York University	N.Y.
Cross, Olinda Severine	D.C.	Cuellar, Juan Ignacio	
Crockett, Mollie Ann	D.C.	Cuff, William Augustine	Va
Crockett, Warren Reed	D.C.	A.B. 1950, Adelphi College	Ohio
Crofoot, Kenneth Stanley	Md.	Culkin, Charles Walker	
Croft, Janet Alice	D.C.	Cull, Rita Anne	Va
Croft, Martha Gertrude	Va	A.B. 1916, A.M. 1952, Western Reserve University	
A.B. 1951, Radford College		Cullen, Garrett Joseph, Jr.	Ill.
Croft, Roberta Maxine	Ohio	B.S. 1940, Boston College	N.H.
Crozan, John Charles	Fla	Cullen, Harry Edward	Hawaii
B.B.A. 1952, University of Miami		Cullen, Mary Agnes	Md.
Crommelin, Diane Clendenning	D.C.	Cullen, Michael	Ohio
Crommelin, Henry	Va	Cullen, Ralston Thomas	Va
Cromwell, Phyllis Virginia	D.C.	Culler, Paul Joseph	D.C.
A.B. 1951, Western Maryland College		Culley, Patricia Jeanne	Md.
Cron, Benjamin Frederick	Mass.	Culp, Theodore Francis	Md.
B.S. 1950, McGill University		Culver, John Rush	D.C.
Cronin, George Francis	N.Y.	Cummings, Frank	Md.
Cronin, John Eugene	D.C.	Cummings, George Patrick	
Crooks, Robert Gladden	D.C.	Cummings, Joseph Gerard	Ohio
B.S. M.S. 1949, Massachusetts Institute of Technology		B.S. 1950, University of Scranton	Va
Croon, Milton Macon	N.C.	Cundiff, Jack Dillon	
B.S. 1952, North Carolina State Teachers College		Cunningham, Hughes Westcott	
Crosby, Herbert Lee	Iowa	A.B. 1941, College of William and Mary	Va
Crosby, Marian Hosfeld	Pa.	Cunningham, Jerry Miles	D.C.
Crosby, Raymond Osborn, Jr.	Mass.	Cunningham, John Joseph	S.C.
Crosby, Suzanne	Md.	Cunningham, Larry Douglas	
Crossed, Theresa Marie	N.Y.	A.B. 1950, University of South Carolina	Va
Croteau, Jeannette Constance	N.H.	Cunningham, Mary Jane Catherine	D.C.
Crothers, James W.	Oreg.	Cunningham, Robert Charles	N.Y.
Crouch, Hasell Wilkinson	N.Y.	Cunningham, Robert James	D.C.
Crouch, Robert Brighton	Idaho	Cupic, Bosko Dusan	N.Y.
B.S. in C.E. 1940, University of Idaho		Cupp, Florence Lorena	
Crouch, William Butler	D.C.	Curley, William S. J.	
Crouse, John Thomas	Va	B.M.E. 1948, Polytechnic Institute of Brooklyn	D.C.
Crouse, Richard Gayle	Md.	Curran, Carmelita Jean	Ill.
Crowder, Aubrey Wendell	Ill.	A.B. 1952, University of Maryland	
Crowder, Dorothy Elaine	Va.	Curran, Mark Cooney	D.C.
A.B. 1951, Madison College		I.D. 1950, Northwestern University	D.C.
Crowe, Natalie Fernak	Ohio	Currie, Lauchlin Morgan	
Crowell, Stewart Preston, Jr.	Mass.	Curry, Alice Grey	

Curran, Eleanor Gayle B.S. 1935, State Teachers College, Farmville	Va.	Daley, John Nicholas	Md.
Curry, Bryce Quentin A.B. in Govt. 1951, The George Washington University	Kla.	Dalkiewicz, Edward Bernard	Pa.
Curry, Mary Catherine B.S. 1942, New York State College for Teachers, Albany	D.C.	Dallaure, Eusebe Andra A.B. 1951, The George Washington University	D.C.
Curtis, Allen Benjamin B.Ch.E. 1945, Penn College	Ohio	Dallas, Alan Balliet	Md.
Curtis, Caroline Alexander B.S. 1950, University of Maryland	Va.	Dallatore, Roland R.	Va.
Curtis, John James Curtis, Kenneth Edward	D.C.	Dalton, Eileen Elizabeth A.B. 1951, The George Washington University	D.C.
Curtis, Harold Marshall, Jr. A.B. 1940, Harvard University	D.C.	Dalton, Jonas Monroe	Va.
Cutler, Robert Franklin B.S. 1950, I.L.B. 1951, The George Washington University	D.C.	Dalton, Mildred Louise	Va.
Cutler, Frank Hickman B.S. 1940, Pennsylvania State Teachers College, Westchester	Pa.	Dalton, Olive	D.C.
Cutcher, Harold A.B. 1949, University of Buffalo	Va.	Daly, Betty Russell	Va.
Cutler, Charles Russell B.S. 1945, California Institute of Technology	Va.	Daly, John	Md.
Cy, Robert Joseph A.B. 1949, American International College	Mass.	Daly, John Joseph A.B. 1949, The George Washington University	Va.
Czarnicki, Myrian Anthony Czarkowski, Stanley Thomas B.S. 1951, University of Delaware	Wis. Del.	Daly, John Joseph Daly, Paul Francis Daly, Ruth Starratt A.B. 1941, American University	Md. D.C. Md.
Dabell, Virgilia Nancy Dado, Nannie Elizabeth B.S. 1948, Concord College	N.Y.	Damazo, Herbert	Md.
Daggen, John Tobey, Jr. A.B. 1951, Bowdoin College	N.Y.	Dambroski, Stanley George	Md.
Dale, Lawrence Joseph B.M.E. 1941, B.B.A. 1950, University of Minnesota	N.Y.	Dameron, Charles Edward	W.Va.
Daley, Anne Williams B.S. 1949, Georgetown University	N.C.	Damever, Richard Welton A.B. 1947, University of Washington A.M. 1948, Fletcher School of Law and Diplomacy	
Dale, Bernard David M.S. in P.H. 1948, Columbia University	Va.	D'Amico, Nick Anthony	Pa.
Dalovich, Anita Lee A.B. in Govt. 1952, The George Washington University	Calif.	Dancs, George	Pa.
Dale, Adelaide Sarah A.B. 1941, Western Washington College of Education	Va.	D'Andrea, Eugene Peter	N.Y.
Dale, Allan Clark A.B. 1947, San Diego State College	Calif.	D'Andrea, Suzanne	N.Y.
Dale, Carolyn Therese Dale, John Estes	Md.	Danesino, Paolo I.	D.C.
Dalesio, Ralph Lee	W.Va.	Danford, Henry Warren A.B. 1950, Yankton College	Ill.
		Danford, James Arthur B.S. 1950, University of Dayton	Ohio
		Danford, Patricia A.B. 1950, Yankton College	D.C.
		Danforth, Paul Chase	Mass.
		Dane, Maybelle Marr A.B. 1945, University of California	Va.
		Daniel, Barry Lloyd	N.Y.
		Daniel, Howard Bernard	D.C.
		Daniel, Jean Ellen	Md.
		Daniel, Sidney Theodore A.B. 1942, New York University	Va.
		Daniels, George Foster	Md.
		Daniels, Monnaez Elizabeth	D.C.
		Daniels, William John	N.Y.
		Danko, John James	Minn.
		Dannenbush, Albert B.S. 1947, Temple University	Pa.
		Dano, John Nicholas	Pa.
		Dansereau, Edward Joseph	R.I.
		Danz, Kenneth Raymond	D.C.
		Danz, Norbert Earl	D.C.
		Danzig, Solomon Albert B.S. 1950, The George Washington University	D.C.
		Darcey, Edward Harry	Va.
		Darden, Edwin Jones A.B. 1948, LL.B. 1950, University of Mississippi	Va.
		D'Arista, Vincent Humbert B.S. 1952, Columbia University	N.Y.
		Darling, Joseph Warren B.S. 1950, Harvard University	Pa.
		Darling, Walter Roy M.B.A. 1954, University of Pennsylvania	Md.

Darragh, Roberta Lechman	Va.	Davis, Geneva Avomette	Me
Darrow, Dan Kellok	Md.	Davis, George, Jr.	P.C.
Dasey, Elizabeth Anne	Va.	Davis, Glenn Allen	Mass.
Das Gupta, Alaknanda	D.C.	Davis, Graham Bernard	
Daskam, Harry Mortimer	Va.	B.E.E. 1946, University of	D.C.
Datlow, Donald William	D.C.	Minnesota	Pa.
Datlow, Gerald Alex	Md.	Davis, Horace Miller	D.C.
Daugherty, Burton Perry, Jr.	Mich.	Davis, James Ray	
A.B. 1947, LL.B. 1950, University		Davis, Joseph Tully	Md.
of Michigan		A.B. 1950, St. Anselm's College	Ohio
Daugherty, F. Morton, Jr.	D.C.	Davis, Katharine Norman	Va.
B.S. 1941, M.S. 1948, University		Davis, Lloyd Edward	Conn.
of Houston		Davis, Lorimer Nathaniel	
Daugherty, Floyd Norton	Va.	A.B. 1942, Marietta College	
B.S. 1950, The George Washington		Davis, Martin Thomas	
University		B.S. 1948, Rensselaer Polytechnic	
Daugherty, John Thomas Cotton II	Va.	Institute	
A.B. 1949, LL.B. 1951, The George		M.S. 1950, The George Washington	D.C.
Washington University		University	
Dawson, Grover Frederick	Va.	Davis, Mary Anne	
Davenport, John Hobson	Va.	A.B. 1944, University of	Md.
A.B. in Govt. 1949, The George		Chattanooga	D.C.
Washington University		Davis, Melvin Gilmore	N.Y.
Davenport, Merv Marguerite	D.C.	Davis, Mescal Arbutus	
Davenport, Milton Monroe	Va.	Davis, Olga	Tenn.
Davenport, Thomas Ira	Pa.	B.S. 1940, Columbia University	
B.S. 1944, 1947, M.S. 1951,		Davis, Otto Luke, Jr.	
Pennsylvania State College		A.B. 1940, Ed.M. 1950, North	Va.
David, Harry	Va.	Texas State College	
David, Joan Eames	D.C.	Davis, Paul Dallas	
A.B. 1936, Radcliffe College		B.S. in Ed. 1943, Southeast	Ill.
David, Robert Spencer	Calif.	Missouri State College	
B.S. 1948, University of California		Davis, Paul Sprague	
A.M. in Govt. 1944, The George		A.B. 1940, Harvard University	
Washington University		Ph.D. 1942, University of Chicago	
Davidson, Herbert Donald	D.C.	LL.M. 1942, Catholic University	P.C.
B.S. 1949, The George Washington		of America	D.C.
University		Davis, Robert Lee	
Davidson, Max Louis	Va.	Davis, Robert Walker	Va.
Davidson, Roy Aaron	Md.	A.B. 1950, The George Washington	
A.B. 1951, The George Washington		University	
University		Davis, Spear John	
Davies, Peter Merrick	D.C.	A.B. 1950, Pennsylvania State	P.C.
Davignon, Elizabeth Mary	N.Y.	Teachers College, Indiana	Va.
B.S. 1946, Vermont State Teachers		Davis, Stuart Ervin	P.C.
College, Lyndon Center		Davis, Thelma Vernam	Mich.
Davis, Yvonne Martha	Puerto Rico	Davis, Thomas Eugene	
Davis, Carl Clell	Okla.	Davis, Vivian Elizabeth	
B.S. 1942, Oklahoma Agricultural		A.B. 1952, The George Washington	Calif.
and Mechanical College		University	Tenn.
LL.B. 1949, University of		Davis, Walter	
Oklahoma		Davis, Warren Jay	P.C.
Davis, Charles Ernest	W.Va.	B.S. 1944, U.S. Naval Academy	Md.
Davis, David Stanley	Ohio	Davis, Wayne Beverly	
A.B. 1950, The George Washington		Davis, Wilbur Chamberlain	N.Y.
University		A.B. 1950, University of Maryland	P.C.
Davis, Dorothy Florence	Conn.	Davis, Wm. Reid	Va.
Davis, Douglas Steward	D.C.	Davis, Mark Leonard	Va.
Davis, John Mary	Tenn.	Davis, Alan Park	Va.
A.B. 1947, Knox College		Davis, Edward Patrick	
Davis, Elsie Virginia	W.Va.	Davis, William John	P.C.
Davis, Elsie Marie	D.C.	A.B. 1947, University of Colorado	N.Y.
B.S. 1941, New Haven State		Davies, David	
Teachers College		Davis, Lila Ewart	Va.
A.M. 1949, The George Washington		A.B. 1952, Hood College	D.C.
University		Dawson, Barbara Carey	
Davis, Elton Daniel	Va.	Dawson, Donald	D.C.
Davis, Ewin Paul	Md.	A.B. 1950, Lawrence College	
A.B. 1949, Washington College		Dawson, Robert Martin	
A.M. 1951, University of Maryland		B.Mus. 1950, Catholic University of	
		America	

Dawson, Shelton Phelps A.B. 1952, The George Washington University	Utah	dellaro, Rafael A.B. 1952, North Texas State College	Texas
Day, Carl Eugene A.B. 1941, Oberlin College	Va.	LL.B. 1937, Dallas School of Law	
Day, Ernest Herbert LL.B. 1950, The George Washington University	Ohio	A.M. 1931, Southern Methodist University	D.C. N.J.
Day, Jane		Dehn, Lucy Martha	
Day, Joseph, Thomas Irvin	Md.	Dehn, Kathryn Evelyn	
Day, James Edward	D.C.	A.B. 1945, Rutgers University	
Days, Rudolph	D.C.	Deigen, Shirley Norma	D.C.
Dayton, William Hooper	D.C.	A.B. 1951, The George Washington University	
Day, Helen Jane	D.C.	Deitch, Ronald Stuart	D.C.
DeArzo, 1944, Wilson Teachers College	D.C.	Deitelbaum, Ronald Herbert	D.C.
DeArzo, Richard Parker	D.C.	Deiter, Stephen Winarz	Md.
Deat, Jean	D.C.	A.B. 1950, Western Maryland College	
Deat, Josephine Russell	N.C.	DeKeyser, Henry Leo	D.C.
Dean, Agnes Mary	Kans.	A.B. 1917, A.M. 1942, New Jersey State Teachers College, Montclair	
Dean, Benjamin Franklin A.B. 1950, The George Washington University	Va. D.C.	DeKosky, Samuel	Md.
Dean, Donnie Maxwell		A.B. 1949, Temple University	
Dean, Hazen Stewart, Jr.	Texas	DeLaCruz, Oscar	Costa Rica
B.S. 1947, University of Illinois	Va.	B.S. in Phar. 1950, University of Costa Rica	
Dean, Mary Hattie	Va.	Delahanty, Anne Leona	D.C.
Dean, Mills III	Va.	Delahanty, Robert Edward	D.C.
DeAngelis, Julia Marie	Conn.	B.S. in C.E. 1948, University of Louisville	
A.B. 1950, University of Georgia	D.C.	Delaney, Everett Truman	Va.
DeBorja, Neilson Thomas	Va.	B.S. 1946, Rio Grande College	
DeBorja, Jean Baptiste Louis	Va.	A.M. 1947, Columbia University	
DeBorja, Frank Sebastian	D.C.	Delaney, John Aloisious	Mich.
DeCaro, Francis M.	N.Y.	A.B. 1950, The George Washington University	
DeCaro, Paula	D.C.	DeLaney, Patricia	D.C.
Decker, Gerald Yale	D.C.	DeLaney, William John, Jr.	Va.
Decker, William Meade II	D.C.	De La Puente, Joseph L.	N.Y.
A.B. 1952, The George Washington University		de La Rosa, Martin Joseph	D.C.
Decker, Allan Irwin		DeLaune, Georges Rene	France
Decker, Charles Seymour, Jr.	Md.	DeLeon, Olaf Gizne	D.C.
Decker, George Edward	Md.	DeLesso, Thomas Anthony	N.Y.
Decker, Helen Perry Ann	D.C.	A.B. 1951, Colgate University	
Dees, Donald Aloisius	Va.	Delfin, Samuel C.	Md.
Dees, Lela Tubwell	Md.	A.B. 1952, M.S. in Ed. 1953, College of the City of New York	
A.B. 1950, The George Washington University	D.C.	Delgado, Concepcion Montenegro	Philippines
DeFrancis, Mar Roselle		Del Gizzo, Anthony Charles	D.C.
A.B. 1949, D'Youville College	Va.	Deliman, Robert Michael	Pa.
A.M. 1951, Catholic University of America		B.S. 1949, University of Pittsburgh	
DeFras, Charles Mumford		Dell, Albert Hampton	Md.
DeFras, Charlotte Lou	Md.	Dell, Anna Louisa	Va.
DeFre, Ellen Sperber	D.C.	A.B. 1938, New Jersey State Teachers College, Upper Montclair	
A.B. 1951, Pennsylvania State College	Pa.	Dellinger, John Curtis	Va.
DeFre, Stanley E.		Delmon, Edward A.	Md.
A.B. 1951, Pennsylvania State College	Pa.	Del Rio, Salvador	Puerto Rico
DeGrover, Nancy Lee		A.B. 1942, University of Puerto Rico	
DeGrover, John Gobel	D.C.	DeLosa, John Francis	D.C.
DeGrover, Joseph Anthony	Utah	B.S. 1952, American University	
B.S. 1949, Trinity College	Conn.	Dembeck, Richard Charles	Ill.
M.S. 1955, The George Washington University		Dembowe, Daniel William	Md.
DeGrazia, Ellen		B.S. 1942, The George Washington University	
A.B. 1945, University of Chicago	Md.	DeMott, Leonard Joseph	D.C.
DeGrazia, James Edward	Md.	Demonge, Donald Edward	Ohio
DeGrazia, Everett Thomas	D.C.	Dempsey, Henry John	Mass.
B.S. 1946, Massachusetts Institute of Technology		Dempsey, Howard Calvin	D.C.
DeHass, Philip Moring	Va.	Dempsey, Raymond Albert, Jr.	Va.
		B.S. 1951, Georgetown University	
		Demshock, John Joseph	Va.

DeMurley, John Edward Stirling	N.J.	Dew, Alice Perkins	Va
B.S. 1952, University of Maryland		A.B. 1937, Mary Washington College	Mass
Dendler, Fred Franklin	D.C.	Dew, Richard Butler, Jr.	Va
Denekas, Marvin Edward	D.C.	DeWald, Glenn August	Va
A.B. 1942, Central College		Dewey, John Dickson	Va
Denko, Omar	Costa Rica	B.S. 1950, Michigan State College	Calif
A.B. 1941, Lawrence College		Dewing, Beverley	Va
Denham, Sara Belle	Ky.	DeWitt, Harvey Jennings	Calif
Dennemeyer, John James	Va.	Dewitt, Henry Arthur	Md
LL.B. 1949, The George Washington University		Dewitt, Kurt	
Dennis, Janet Louise	Pa.	A.B. 1941, Reed College	
Dennis, Perry Leroy	Md.	Dewitt, William Bradley	
Dennison, Thomas W.	D.C.	A.B. 1948, Howard College	
Denny, Frank James	Md.	A.M. 1962, The George Washington University	Va
B.S. 1947, LL.B. 1951, Georgetown University		Devo, Beverly Balseley	Thailand
Dent, James Armistead, Jr.	D.C.	Dhebananya, Vallabha	Md
Dent, John Francis	D.C.	B.Com. 1947, University of Bangkok, Thailand	
A.B. 1941, Syracuse University		Dhyse, Frederick George	Green
De Onnellis, John Louis	Ala.	A.B. 1941, University of California	NY
A.B. 1942, Spring Hill College		Diamantopoulos, Spiros K.	
LL.B. 1949, Georgetown University		Diamond, Gerald	D.C.
De Papp, Edwin G.	Va.	A.B. 1949, New York University	D.C.
De Pasquale, Anthony Bruno	Pa.	Diamond, Louis Wilhelm	D.C.
B.S. 1952, Pennsylvania State Teachers College, Indiana		Diamond, Louis Howard	N.J.
D'Furio, Albert Lincoln	Pa.	Diaz-Godun, Mario	Md
D'Furio, Carl Michael	Pa.	Dibble, Duane William	
DePorte, Paul Vital	Md.	DiCaprio, Jennie Grace	
A.B. 1942, Rutgers University		Dick, Charles Herbert	D.C.
Deputy, John G., Jr.	Va.	A.B. 1950, University of Maryland	
Dermody, Woodrow Grimes	Md.	Dickenson, William Edward	Va
Deroin, Gene	Ill.	B.S. 1952, American University	
A.B. 1949, Cornell College		Dickerson, Charles D.	
Der-Stepanian, Oshin	Iran	A.B. 1946, LL.B. 1950, University of Virginia	
A.B. 1952, Harvard University		Dickerson, Eric E.	Pa.
Dersten, Donald Alfred	Mich.	Dickerson, Ruth	Md
DeSantis, Dorothy Elsie	Va.	Dickerson, Wilton Harry	
DeSauture, Mar Brit	D.C.	A.B. 1948, A.M. 1949, University of Minnesota	D.C.
A.B. 1948, University of California at Los Angeles		Dickey, Maxine	Va
Deschaine, Bernard Richard	Mich.	Dickerson, Stephen Allen	D.C.
deSeife, Gloria Verna	N.J.	Dickson, William Francis	Md
Desmond, James Francis	Md.	Diehl, Frank Martin	Md
Desmond, Patrick Allen	Conn.	Diehl, Sylvester James	
Despopoulos, Alexander	Md.	Diehm, Ira Cortland	D.C.
Desportes, Penelope	Md.	B.S. 1949, Franklin and Marshall College	D.C.
Despres, H. Philip	D.C.		
Detta, Patricia Anne	N.Y.	Diemer, Fred Joseph	
DeTurk, Phil Henri	Md.	Dierden-Crockett, Jeffery Roher	
Derweiler, Mark George	Pa.	A.B. in Govt. 1951, The George Washington University	Conn
Derwiler, Charles Robert	D.C.		Va
Derwiler, Donald Seale	D.C.	Dietch, Michael Morgan	Kans
Derwiler, Harry Grubb	Pa.	Dieter, Carlisle Lyon	
B.S. 1950, Pennsylvania State Teachers College, Westchester		Dieter, James George	Va
A.M. in Ed. 1952, The George Washington University		B.S. 1949, Kansas State College	Md
Derwiler, Mary Lucretia	D.C.	Dieter, Rose Ward	Kans
Deusch, Joseph	N.Y.	Dietsch, Earl Donald	N.Y.
A.B. 1947, Brooklyn College		Dietsch, Jack Mitchell	
B.S. 1948, Pennsylvania State College		Dietschson, Warren Douglas	Fla
		B.S. 1945, U.S. Naval Academy	
		Dietz, Glenn Allen	
		A.B. 1950, The George Washington University	D.C.
Dexerall, Catherine Noble	Va		Pa.
Dexteran, George	Ill.	DiGosian, Anna Maria	Pa.
Dewier, Clinton Miller	Va.	DiLanni, Emma	
A.B. 1951, Bridgewater College		Dilgren, Paul Alaric	
Devon, Charles, Jr.	D.C.	Dillard, Carolyn Pierce	
Devine, Edward Peter	D.C.	A.B. 1945, Randolph-Macon Woman's College	
Devlin, Thomas Eugene, Jr.	D.C.	A.M. 1936, Emory University	
Devlin, Walter James	N.J.		

Dillard, George Pershing	D.C.	Dodge, Ruth Avis	Va.
Dillehay, Thomas Jefferson, Jr.	Texas	A.B. 1925, M.S. 1926, Middlebury College	
A.B. 1927, A.M. 1929, Baylor University		A.M. 1927, Syracuse University	Va.
J.D. 1932, The George Washington University		Dodge, William Bannard	Va.
Diley, Donald LeRoy	Colo.	Doddrill, Earl Junior	Va.
Dilich, Jack Hodgen	Va.	A.B. and B.S. 1950, Fairmont State College	
Dillingham, Arthur W.	Ark.	Dodwell, Sara Irene	Maine
A.B. 1939, University of Arkansas		Doernenburg, Helen Johanna	Ill.
Dion, John Henry	Md.	Doherty, Frances W.	Fla.
B.S. 1934, Bates College		Doherty, John Chewning	Calif.
Dilorenzo, Anthony John	D.C.	B.S. 1941, U. S. Naval Academy	
A.B. 1961, Catholic University of America		M.S. 1947, Massachusetts Institute of Technology	
Dilorenzo, Theodore John	D.C.	Doherty, Joseph Anthony	Fla.
A.B. 1950, Trinity College		B.S. 1939, University of Massachusetts	
Dilmarino, Horace Robert	Mass.	L.L.B. 1948, John B. Stetson University	D.C.
Leumette, Elise Shields	Md.	Doherty, Joseph Charles	
Dingman, Richard Briggs	D.C.	A.B. 1948, Duquesne University	Pa.
Dingman, Robert Walter	Va.	Doherty, Louise Amelia	
A.B. 1950, Houghton College		A.B. 1952, Seton Hall College	Fla.
Dinwiddie, Carl Finch	Md.	Dohndorf, Fay Marilla	Conn.
Dion, Marie Berthe	D.C.	Dolan, Charles Heave III	
Dion, Louis Pasquale	Va.	A.B. 1950, Kenyon College	N.Y.
Disharoon, Elmer Woodrow	Va.	Dolan, John Edmund	Md.
Dissmer, Richard Edward	D.C.	Dolan, Joseph Edward	
P.S. 1948, Ohio State University		B.S. 1941, University of Illinois	Mass.
Ditrich, Florence Judith	D.C.	Dolan, Robert Chinton	
Dix, Luis Armando	Guatemala	A.B. 1949, Bowdoin College	D.C.
Dix, William Beach	Va.	Dolba, Katherine Genevieve	D.C.
Dix, Edgar LaRue	D.C.	Dolaka, Herbert	D.C.
Dix, Francis	Md.	Doll, David Kay	Md.
Dix, Leslie Vernon	Wis.	Dollar, Henry	
A.B. 1950, Iowa State Teachers College, Cedar Falls		B.C.E. 1917, College of the City of New York	N.Y.
Dixon, Ben Franklin III	N.C.	Dolnick, Ethel Helen	
A.B. 1940, University of North Carolina		B.S. 1941, A.M. 1947, The George Washington University	Wis.
Dixon, Glove Iven, Jr.	Md.	Domann, John Thomas	
A.B. 1961, The George Washington University		B.S. 1961, University of Wisconsin	Wis.
Dixon, Donald Hamilton	Va.	Domann, William Arthur	
Dixon, Earl Richard	Va.	B.S. 1948, University of Wisconsin	Md.
Dixon, Leon Lewis	N.C.	Domene, Ralph Ross	D.C.
Dixon, Margaret Elizabeth	D.C.	Domenech, Laura Victoria	D.C.
A.B. 1941, Ph.D. 1947, Syracuse University	N.Y.	Domine, Grace Manoll	Md.
Dixon, Robert G., Jr.		Dompka, Robert James P.	D.C.
Dixon, Roland James	Va.	B.S. 1949, University of Pittsburgh	
Dixon, Thomas Wilson	Md.	Donahay, Isator James	D.C.
L.L.B. 1949, The George Washington University		A.B. 1962, The George Washington University	Va.
Dizenga, Allene Headley	Md.	Donahoe, Robert Charles	
B.C. 1927, Mary Washington College		B.S. 1917, College of the Holy Cross	D.C.
Dobson, Jerry William	D.C.	Donahue, Wade Hampton, Jr.	Nebr.
Dobson, Dorothy Skene	Ga.	Donahue, Edward Brennan	
B.S. 1948, Duke University		B.S. in M.E. 1948, South Dakota State College	D.C.
Dobson, Emma University		Donahue, Mary Frances	Pa.
Dobson, Joanne Marquerite	D.C.	Donahue, Mary Kay	Va.
Dobson, Bolden John	N.Y.	Donahue, John Eldridge, Jr.	
A.B. 1949, New York University		A.B. 1949, The George Washington University	Mont.
Dobson, Robert Paul	Conn.	Donally, William L.	
A.B. 1961, University of Connecticut		B.S. 1952, Montana State University	D.C.
Dobson, Richard Hal	Va.	Donato, James Leo	D.C.
B.S. 1949, Kansas State College		Danielson, Samuel	N.J.
Dobbs, Lafayette	Ohio	Dandy, Charles Paul	D.C.
A.B. 1952, Ohio State University		Dandy, Theodore George	D.C.
Dobek, Oscar Irving, Jr.	D.C.	Donnelly, Charles Jerome	D.C.
Dodge, John Edmundson	Va.	Donnelly, John Charles	D.C.
Dodges, John Parker	Md.	Donnelly, John Lippin	D.C.
A.B. 1940, Johns Hopkins University		Donnelly, Orville Wright	Md.
		A.B. 1941, Swarthmore College	

Donnelly, Owen James	D.C.	Dow, Thomas William	Ma
Donnelly, Phyllis Bell	Va.	B.S. 1928, M.S. 1941, Purdue University	D.C.
Donnelly, Richard Charles	D.C.	Dow, Tsung I.	
Donotrio, Louis John	N.J.	A.B. 1939, National Central University, China	
Donohue, John Francis	D.C.	A.M. in Govt. 1950, The George Washington University	Wash.
A.B. 1941, Catholic University of America		Dowd, George Gordon	
Donohue, John Andrew	Va.	A.B. 1941, Western Washington College of Education	Ma
A.B. 1942, The George Washington University		Dowell, Margaret Stevens	N.Y.
Donohue, Lorraine Seegrist	Va.	B.S. 1942, University of Maryland	Calif.
A.B. 1947, The George Washington University		Dowling, Richard Emmett	
Donohue, William George	N.Y.	Downes, Edward Patrick	
Donovan, Catherine Angela	D.C.	A.B. 1942, Loyola University of Los Angeles	Neb.
B.S. 1947, Pennsylvania State Teachers College, California		Downey, Alma Gayle	
Donovan, Daniel Russell	Va.	A.B. 1941, The George Washington University	Va.
Donovan, Mary Katharine	N.Y.	Downing, George Alan	Pa.
A.B. 1941, Manhattanville College of the Sacred Heart		Downing, Paul Kenneth	Ma
Donvito, Pasqual Anthony	Pa.	Downing, Robert Ryan, Jr.	D.C.
A.B. 1949, The George Washington University		Downs, Edward Alley	D.C.
Doohan, Walter Francis	Conn.	A.B. 1940, Harvard University	Va.
Dooley, John Albert	Texas	Downs, Jeanne Lou	Calif.
Dooley, William Jay	Ma	Downs, Justin Gaylord, Jr.	
Dopier, Beverley Schmidt	Va.	Downs, Robert Jack	
B.S. 1950, University of Pittsburgh		B.S. 1950, M.S. 1951, The George Washington University	Ma
Doran, Frank Patrick	Mass.	Downson, Carmen Elizabeth	D.C.
Doran, Loretta May	D.C.	Dowle, Edward Joseph	Pa.
A.B. 1940, The George Washington University		B.S. 1950, Syracuse University	R.I.
Doran, Philip Joe	Va.	Dowle, Ellmar F.	Calif.
Doremas, Stanley Dodge	Wash.	Dowle, Herbert Aloysius, Jr.	
B.S. 1950, University of Illinois		Dowle, James Henry, Jr.	Va.
Dorfman, David	D.C.	B.S. 1946, U.S. Naval Academy	
Dorfman, Milton Sigmond	D.C.	Dowle, Meldon Eugene	
Dorsey, James Douglas	N.J.	A.B. 1940, The George Washington University	D.C.
B.S. 1949, Vassar College		Dowle, Vincent Joseph	Pa.
Dorman, William Stephen	Mass.	Dowle, William Andrew	D.C.
B.S. 1948, Worcester Polytechnic Institute		B.S. 1951, Georgetown University	D.C.
Dorning, William Francis	Pa.	Draewell, Mary Helen	Ma
Dost, Carl Anthony	D.C.	Dreana, Rita M.	Ma
Doutis, Maria Bernard	D.C.	Drake, Dorothy Georgette	Ma
Douch, Beverly Joan	D.C.	Drake, Elizabeth Louise	Va.
B.S. 1952, Drexel Institute of Technology		Drake, Emma G.	
Dorsey, Guy Houston	N.J.	Drake, John G.	Iowa
Dos Santos, Antonio Barsante	D.C.	B.S. 1950, American University	
Masters in Journalism 1951, University of Brazil		Drake, Mary Lou	Ma
Doswell, Menard III	Va.	A.B. 1944, State University of Iowa	D.C.
A.B. 1947, Tulane University		Drake, Norman Martin	Mass.
Dougherty, Dale Alma	Va.	Drake, Sherwood Albert	Ma
Dougherty, Harold Joseph	Ma	Drake, Spencer Ralph	
Dougherty, Thomas James	Va.	Drake, Vera Colby	D.C.
A.B. 1951, The George Washington University		B.S. 1911, Oregon State College	
Dougherty, Wayne J.	Va.	Draper, Elizabeth Holl	D.C.
A.B. 1941, University of Iowa		A.B. in Ed. 1924, A.M. in Ed. 1931, The George Washington University	Calif.
Douglas, James H. III	Ill.	Draper, James Kenneth	
Douglas, Glen LaRoy	Texas	Drayer, John Roger	Mass.
Douglass, John Robert	Va.	B.S. in Eng. 1948, Ohio State University	
Douglass, Paul Manuel, Jr.	Va.	Drazek, Lillian Bertha	S.D.
Douglas, Nicholas George	D.C.	A.B. 1949, University of Michigan	
Douglas, Augustus George	Mass.	Dreguth, Kenneth Adair	
B.S. 1947, University of Nebraska		A.B. 1949, Augustana College	
LL.B. 1949, Harvard University		B.S. in Med. 1951, University of South Dakota	N.Y.
Doward, Robert James	Mass.	Dreibholz, Joan Ada	Ma
Dove, Lucille Weiss	Ma	Drescher, John M., Jr.	
Dow, Brenda Louise	Ma	A.B. 1949, Princeton University	
Dow, Mary	Mass.		

Diesel, Robert James A.B. 1950, The George Washington University	D.C.	Dunaway, Edward George	D.C.
Drew, Joan Hunter		Duncan, Carolyn Agnes	Pa.
Drew, Judith Mary	D.C.	Duncan, Donald George	D.C.
Drew, William John	D.C.	Duncan, James Morton	D.C.
A.B. 1948, McGill University	D.C.	Duncan, John Edward	D.C.
Dricoll, Anna Mae Rhian		Duncan, John Oliver	Md.
Droll, Henry Andrew	Va.	A.B. 1949, The George Washington University	
B.S. 1952, The George Washington University	N.Y.	Dunfee, Bernadine Langdon	Ohio
Droll, Marian Clarke		B.S. in Ed. 1919, Wilmington College	
Droll, Philip Martin	Va.	Dunham, Franklin George	Va.
Droney, Paul Vincent	Va.	Dunie, Maurice Robert	D.C.
Drookin, Herbert	D.C.	B.S. in F.S. 1950, Georgetown University	
B.E.E. 1950, Cooper Union	D.C.	Dunkleberger, Andrew P.	Md.
Drummond, Frank Brown		Dunlap, Gloria Shrewsbury	Va.
Drummond, Kenneth Herbert	Va.	Dunlap, Patricia Louise	Md.
B.S. 1949, University of Arizona	Calif.	Dunn, Alanson Burton	Texas
Drummond, Thomas Darrell		A.B. 1948, B.B.A. 1947, University of Texas	
A.B. in Ed. 1952, The George Washington University	Va.	Dunn, Carol Patricia	Va.
Druy, Paul Oliver		Dunn, Elwood McDonald, Jr.	N.C.
Duce, Katharine	D.C.	B.S. 1941, University of North Carolina	
A.B. 1917, Iowa Wesleyan College	Ohio	Dunn, Florence Wright	D.C.
Dyer, Orville William		Dunn, Floyd Ellsworth	D.C.
B.S. 1940, Bowling Green State University	Ohio	B.S. 1925, U. S. Military Academy	
Dabendorf, Jeanne		Dunn, George Martin	N.Y.
Dabeyer, Dorothy Ennis	Md.	A.B. 1949, The George Washington University	
A.B. 1941, Brooklyn College	Md.	Dunn, Howard	Md.
Dabney, Alfred Michael		A.B. 1946, College of the City of New York	
Dabney, Florence Ruth	Va.	A.M. 1946, Columbia University	
Dabney, Rose	Md.	Dunn, Kenneth Henry	D.C.
Dabson, Francis Manuel	D.C.	Dunn, William Francis	Md.
Dadman, Patricia Louise	D.C.	Dunning, James Elliott	D.C.
Dadman, Gloria Mary	R.I.	Dunning, William Charles	D.C.
Dadman, Richard Baruch	Mass.	Dunnington, Elgin Adams, Jr.	Md.
Dadsworth, Alan Clark	Md.	A.B. 1950, The George Washington University	
B.S. 1951, The George Washington University	Va.	DuPont, Helen Margaret	D.C.
Dad, Richard Joseph		DuPre, Grace Shirk	D.C.
Dad, Paul Joe	Va.	DuPre, William Morton	Md.
Dadick, Keith Oscar	D.C.	LL.B. 1948, Miami University	
Dudley, Ann	Va.	Durant, James Calvert	Fla.
A.B. 1941, East Carolina Teachers College	D.C.	Dunard, Anne Marie	Switzerland
Dudley, Barbara Anne		Dumas, Barbara Elizabeth	Va.
Dudley, George Hayden	D.C.	Durden, Patricia Ann	D.C.
Dudley, James Rogers	D.C.	Durham, Jean Elizabeth	Va.
B.S.C. 1950, U. S. Naval Academy	Va.	B.S. 1934, Georgia State College of Women	
Dudley, James William		Durkin, Martin Bernard	Va.
Dudley, James Downell	Iowa	Dunbaugh, Evelyn Grace	D.C.
Dudley, Robert Manoukian	Fla.	A.B. in Ed. 1931, The George Washington University	
Dudley, Robert Hamilton	D.C.	Dussault, Adrienne	Va.
Duffy, Salvatore Peter	Ark.	Dutton, Donald Eugene	Kans.
Duff, Owen Douglas	Md.	A.B. 1945, Yale University	
B.S. 1947, University of Nevada	D.C.	Dutton, Robert Hervey	Ill.
Dugan, Edward Vincent	D.C.	Duval, Miles	D.C.
A.B. 1949, University of Utah		B.S. 1918, U. S. Naval Academy	
Dugan, Mell Lee	Va.	M.F.S. 1947, The George Washington University	
Dugan, Kenneth Dale	D.C.	Duval, Allen Joseph	Md.
A.B. 1942, Sweet Briar College	Va.	B.S. 1947, The George Washington University	
A.M. 1951, The George Washington University		Duval, Donald Knox	D.C.
Duke, Maria Richardson		A.B. 1929, Yale University	
Duke, Joseph Augustine	Va.	Duval, Joseph Lincoln	D.C.
A.B. in Govt. 1951, The George Washington University	Mass.	Duval, Vera Vinson	D.C.
Dumas, Charles William	Va.	Dwyer, John B.	Ohio
		A.B. 1950, Miami University	
		J.D. 1952, Ohio State University	

Dwyer, Louis Eugene B.S. 1948, American University	Md.	Economy, Jack D. B.S. in B.A. 1949, Georgetown University	Va
Dwyer, Nancy Ellison	D.C.	Edelen, Francis Clifford	Pa
Dysk, William Donald A.B. in Govt. 1950, The George Washington University	D.C.	Edelen, Sister Mary Joseph	D.C.
Dyer, Nancie Carolyn A.B. 1951, Goucher College	D.C.	Edelschein, Barbara Harriet	D.C.
Dyer, Robert Francis A.B. 1951, University of Michigan	D.C.	Edelschein, Theodore Edward A.B. 1952, The George Washington University	Ont
Dyer, William Warren	Va.	Edelson, Jerry A.B. 1949, University of Cincinnati	D.C.
Dyess, Helene Louise	Okla.	Edenbaum, Robert Lawrence	Md
Dykes, Herman Taylor, Jr.	D.C.	Ederma, Vello	Va
Dykes, John Krizo	Ill.	Edinberg, Joyce Felsen A.B. 1951, University of California at Los Angeles	Va
Dyreson, Constance Oslane	D.C.	Edinberg, Norman Joseph A.B. 1949, Clark University	D.C.
Dysland, Audrey Bernadine	Md.	Ediwan, Peter C.	D.C.
Dysland, Clara Joan	D.C.	Ediwan, Irwin Paul	Va
Dysland, Robert Carroll	Md.	Edlow, Eleanor Louise	D.C.
Dyson, Henry Harrison, Jr.	Va.	Edmonds, Sadie Ellen	Va
Dzimian, Raymond Joseph A.B. 1950, University of Buffalo	Md.	Edmondson, Ruby Mae	Va
E			
Eadie, Kate Turner	Va.	Edmonds, James B., Jr. A.B. in Govt. 1941, The George Washington University	W.Va
Eagan, James Greenleaf	D.C.	Edmunds, John Venable A.B. 1949, Centre College	Md
Eagan, John Francis, Jr.	Va.	Edson, James Frederick	Ill
Eagle, Helyn Doris	W.Va.	Edwall, Warren Emerson A.B. in Govt. 1950, The George Washington University	D.C.
Eanet, Lawrence Joseph A.B. 1952, Harvard University	D.C.	Edwards, Barbara Ann	S.C.
Eargaman, Lucy Carrick A.B. 1951, Maryville College	Pa.	Edwards, Carolyn Jean	Md
Earle, Harold Fred B.S. 1951, University of Maryland	Md.	Edwards, Edith May	W.Va
Early, Douglas McCord	D.C.	Edwards, Eloise Link A.B. 1951, Shepherd College	Va
Early, William Norman	D.C.	Edwards, Fred I.	Va
Easley, Giles Monroe	Md.	Edwards, Henry William B.E. 1937, Western Montana College of Education	
East, William Francis A.B. 1950, Western Maryland College	Va.	A.M. in Ed. 1952, The George Washington University	Va
Eastin, Roy Brandon, Jr. A.B. 1942, A.M. 1945, The George Washington University	Ky.	Edwards, Leon Christopher A.B. in Ed. 1928, Newberry College	D.C.
Eastman, Laura Ellen A.B. 1949, Cornell University	Va.	Edwards, Millicent Elizabeth	Pa
Eastman, Robert Emerson B.S. 1946, U. S. Naval Academy	Calif.	Edwards, Perry LaFaye	Md
Easton, Carl Wilbur	Va.	Edwards, Rosaline Mary B.S. in Ed. 1934, A.M. 1935, Ph.D. 1952, Fordham University	Okla
Eaton, John David B.S. 1944, U. S. Naval Academy	Mass.	Edwards, Rostand Hurbit	Ind
Eberly, Joyce Eileen	Nebr.	Edwards, William John	Md
Ebert, Beatrice M. Charline	N.Y.	Edwin, Gabriel B.S. 1949, M.S. 1951, The George Washington University	D.C.
Ebert, Eugene A.B. 1952, The George Washington University	D.C.	From, Reuben	Ont
Eby, Amy Bowen A.B. 1950, Shepherd College	Md.	Etreland, Robert Grant A.B. 1941, Stanford University	D.C.
Eccles, Lydia Lawrence	Va.	Egan, Charles Alfred	Pa
Eccles, Parley Neuman	Ariz.	Egan, Edward Francis B.S. 1952, Mount St. Mary's College	D.C.
Echalk, John	Pa.	Egan, George William	Va
Echegaray, Miguel de A.B. 1952, The George Washington University	D.C.	Egert, John Paul	Ind
Echols, Gary Colvard	D.C.	Egert, William Richard B.S. 1952, Brigham Young University	Md
Eck, John Paul	D.C.	Egeli, Peter Even	N.C.
Eckard, Norman Gary	D.C.	Egerton, Robert Bradley B.S. 1950, University of North Carolina	Va
Eckensberger, William Henry, Jr. A.B. 1951, Muhlenberg College	Pa.	Ehlers, Kathleen Lillard A.B. in Ed. 1948, The George Washington University	D.C.
Economides, Alexandra Mattheos	D.C.	Ehrentaut, Gustave	D.C.
Economou, Paul Storaty	D.C.	Eilers, Elizabeth Anna	
Economou, Straty Harry	D.C.		
Economou, Zmaro	D.C.		

Elmer, Margaret Hermann	Va	Ellis, Roberta Anne	Md.
Einheber, Albert	Pa.	A.B. 1948, The George Washington University	
A.B. 1948, M.S. 1950, The George Washington University		Ellis, William A.	Wash.
Eisenberg, Bernard Carl	D.C.	A.B. 1941, University of Washington	
A.B. 1941, The George Washington University		Ellmann, Margaret Suzanne	D.C.
Eisenberg, Florence Heyman	Md.	A.B. 1941, Wellesley College	
B.S. 1949, Cornell University		Ellsworth, Elmer Irvin	D.C.
Eisenberg, Warren William	N.J.	Elly, Patricia	Md.
Eisenberger, Dorothy Evelyn	Ohio	A.B. 1949, College of Notre Dame	
Elaine, Donald Clifford	D.C.	A.M. 1941, The George Washington University	
Elmer, Jerome	N.Y.	Elmenfest, Arlene Mae	D.C.
Elmer, Mark, Jr.	N.Y.	Elson, Oren Samuel	Va.
A.B. 1950, The George Washington University		Elstad, Victor Bernhard	Va.
Ekenblad, Lillian Mabel	Pa.	A.B. 1941, St. Olaf College	
Ekman, Donald Quentin	Md.	Elawick, Jessa Clarence	D.C.
Ekman, Florence Ethel	D.C.	Elfride, George Joseph	D.C.
Ekman, Donald Quentin	Md.	Edward, Elizabeth Anne	Md.
Ekman, Florence Ethel	D.C.	A.B. 1942, Trinity College	
Elam, Barbara Jean	D.C.	Elwyn, Mary Ball	Md.
Elbi, Alena	Va.	Elly, Adair Anderson	Va.
Elber, Shirley Marie	D.C.	A.B. 1941, University of Virginia	
Elber, Vernon David	Md.	Elly, Marvin Thomas	W Va.
Elberidge, Hixon B.	D.C.	Elly, Richard Calderley	N.J.
Elkins, John Fox	Tenn.	Emmende, Peter Valentino	D.C.
Elkins, Ella Grimes	D.C.	Emmery, Thomas Carl	D.C.
Elkin, George, Jr.	Va.	Emmelt, Harold	D.C.
B.A. 1950, Western Reserve University	W Va.	Emerson, Harold Leonard	Va.
Elington, Jack		Emerson, Margaret Wagner	Va.
B.S. 1947, College of the City of New York	Ill.	Emery, Clarence Eugene, Jr.	Md.
A.M. 1946, The George Washington University		B.S. 1941, University of Maine	
Ellis, Thomas Lamb		Emmett, William Joseph	Fla.
A.B. 1941, Harvard University	Md.	Emmons, Paul M.	N.Y.
Ellis, Evelyn		Emory, George Meade	Wash.
Ellis, Clifford		Emory, Osville James, Jr.	D.C.
Ellis, Natalie Jane	Ill.	Emory, Arthur Philip	Md.
Elko, George Henry	Colo.	B.S. 1941, University of Wisconsin	
B.S. 1941, Pennsylvania State Teachers College, Indiana	W Va.	Emmes, Richard John	D.C.
Elko, Helen	Pa.	A.B. 1939, University of Washington	
Eller, Charles Edward	D.C.	Emeyer, Grace	Calif.
Eller, Joseph Maurice	Va.	Emey, Richard Harris	Va.
Eller, Robert Wittington	Md.	Emel, Edward	D.C.
B.S. 1941, Wilson Teachers College		A.B. 1942, The George Washington University	
Eller, Dorothy Adams		Emel, Mary Louise	D.C.
Eller, Richard Leif	Va.	Emel, Mosam Navikov	D.C.
A.B. 1942, Duke University	Ariz.	Emelberg, Cecelia Davis	N.J.
Eller, Fela Louise	N.C.	A.B. 1946, Pennsylvania State College	
Ellis, Fredericks Kirk	D.C.	Emeland, Frank Ashbey	Va.
A.M. 1940, George Peabody College for Teachers	Pa.	Emmard, James William	N.J.
Ellis, Robert Arthur	Va.	Emple, Donald Ray	Pa.
A.B. 1951, The George Washington University	D.C.	Emple, Wilson Grove, Jr.	Va.
Ellis, Claude Taylor		B.S. 1941, Pennsylvania State Teachers College, Mifflinville	
Ellis, Doris Rosenberg	Md.	Engels, Joseph Thomas	Va.
Ellis, Edna Jane	N.Y.	A.B. 1941, Washington and Lee University	
Ellis, George Joseph, Jr.	Fla.	Engelst, Helen Wiggs	Va.
A.B. 1942, Catholic University of America	Md.	Engelst, Milton George	D.C.
Ellis, James Rudolph, Jr.		A.B. 1944, Princeton University	
Ellis, John Cole	Md.	Engelst, Roy Theodore	Va.
A.B. 1949, Yale University	N.Y.	A.B. 1941, Vanderbilt University	
Ellis, John Reavis	D.C.	L.L.B. 1931, Columbia University	
Ellis, Marian Bissell	Ga.	English, Douglas K.	Calif.
Ellis, Mary Bedale	N.Y.	B.S. 1940, University of Southern California	
	Pa.	Enholdm, Eric Rudolph	Va.
		Enlow, Lyle Edwin	D.C.
		Ennis, Jacqueline Mae	D.C.
		Ennis, Thomas Michael	W Va.
		Enos, Edward S.	D.C.
		B.S. 1952, New York University	

Faison, Edmund Winston A.B. 1948, A.M. 1950, The George Washington University	Va.	Faust, Wilda Fredern A.B. 1939, Iowa State Teachers College	D.C.
Faith, Francis Reinsel	Va.	A.M. 1943, University of Florida	Pa.
Falardeau, Thelma Elaine	D.C.	Favarella, Samuel Peter	D.C.
Falk, Erling Hultgreen	D.C.	Favre, Pierre André	D.C.
Fane, Raymond Louis, Jr.	Md.	Fawal, Iss Aziz	Va.
Fale, Donald Burton	D.C.	Fawcett, Melvin Dewey A.B. 1942, Shepherd College	Va.
Faller, George Cornelius, Jr.	Ill.	Fawkes, Bernhard Thomas A.B. 1950, Colgate University	Md.
Fallon, Edward Joseph	N.Y.	Fay, John Francis	D.C.
Fallon, Eugene University of Rochester	N.Y.	Fay, Patricia Allen	N.J.
Fallon, George Francis, Jr.	D.C.	Fay, Richard Joseph A.B. 1951, College of the Holy Cross	N.Y.
Fallon, John Edward	Mass.	Fay, Robert Armstrong	W Va.
Fallon, Lucille T.	Va.	Feaster, Eston Kermit A.B. 1944, Fairmont State College	Mo.
Falls, Cyril Thompson	Fla.	A.M. 1949, West Virginia University	Puerto Rico
Famous, Priscilla	Md.	Feather, Ben Wayne A.B. 1952, Duke University	Va.
Fandrick, Ann	D.C.	Febles, Francisco B.S. 1958, The George Washington University	Va.
Fanner, Margaret Catherine	D.C.	Fehren, Albert William, Jr.	D.C.
Fanner, Donald Ross	D.C.	Fenster, George Leonard	N.Y.
Fane, Stan Livingston	D.C.	Fede, Frank B.B.A. 1910, College of the City of New York	D.C.
Farah, Cesar	D.C.	Feeder, David Byrl B.S. in C.E. 1948, University of Missouri	D.C.
Farah, Winifred Todd	D.C.	Feder, Joan Ruth	D.C.
Farnham, Andrew Reed	D.C.	Federico, Joan Foye	D.C.
Fares, Robert James	Kans.	Federico, Patricia Morris	D.C.
M.C.E. 1948, Rensselaer Polytechnic Institute		Fedor, Helen Ince	Va.
Farmer, Thomas Albert	D.C.	Federov, Victor	Va.
Farmer, Dorothy Louise	Ky.	Fee, Marie Louise	D.C.
Farmer, Robert Slaughter	Va.	Fee, Norman Francis A.B. 1952, Carleton College	N.M.
Farmer, Wallace Darwin	Md.	Feehan, Eugene Francis A.B. 1951, Catholic University of America	D.C.
Faro, Ruth Marian	D.C.	Feeney, Edward Jude A.B. 1951, St. Anselm's College	Maine
Farguhar, Gordon Nesbit	D.C.	Feenzell, Sam George A.B. 1958, Stanford University	Mont.
Farguhar, Virginia Fischer	D.C.	Feffer, Jean Taphun	D.C.
Farr, Robert Thomas	D.C.	Feild, Agnes Parish A.B. 1950, Westhampton College	Va.
Farrall, Frances Bernadine	Va.	Feild, Robert Royan	Va.
Farrall, Albert Bernard	Md.	Feild, Sam Coupe, Jr.	Va.
Farrall, Antoinette Eugenia	D.C.	Fessenden, John Edward, Jr.	D.C.
Farrall, Donald Leo	N.J.	Festner, Margaret Marie	D.C.
Farrall, James Jerome	D.C.	Fets, George Henry	Pa.
Farrall, Katherine Louise	Minn.	Feltman, Beryl Betty B.S. 1956, Ohio State University	Ohio
Farrington, Charles Jerome	D.C.	Feltman, Edmund Henry	D.C.
Farr, 1954, University of Arizona	Ariz.	Feltman, Sylvia Dollie	D.C.
Farr, Frederick Arthur	Calif.	Felix, Anna Elvira	D.C.
Farr, University of Minnesota	Va.	Felix, Rena	N.Y.
Farr, Frederick Joseph	Va.	Feller, Ralph Miles A.B. 1952, The George Washington University	N.Y.
Farrow, Richard Paul	Va.	Fellows, Keith Harrison	Va.
A.B. 1950, Catholic University of America		Felt, Thomas Edward	Md.
Fauberg, Harold Edward	Va.	Feltman, David Brown A.B. 1952, The George Washington University	Va.
A.M. 1940, Ohio State University		Feltman, Emily Ann	Ky.
Paugh, Mary Ann	Kans.	Feltman, Mary Frances	Ky.
Faulner, Josephine Brock	D.C.		
Fazio, Nancy Jeanne	N.Y.		
A.B. 1951, Wellesley College			

Fendrick, Donald J.	Pa.	Finberg, Joseph	Va.
B.S. 1952, University of Pennsylvania		Finch, John Robert	Va.
Fenschel, Gloria Edith	D.C.	Finch, Walter GKrist	Md.
Fenschel, Melvin Medford	N.Y.	B.E. 1949, M.E. 1950, Johns Hopkins University	
A.B. 1941, Dartmouth College		LL.B. 1948, M.B.A. 1949, Temple University	
Fenuk, John	N.J.	LL.M. 1949, The George Washington University	D.C.
B.S. 1952, Rutgers University		Fine, Barbara Ann	Md.
Fenton, Raymond Henry	Mich.	Fine, Edward Earl, Jr.	Pa.
B.S. in P.E. 1949, The George Washington University		B.S. 1948, American University	
Fenster, Harvey Saul	D.C.	Fine, Martin Meyer	N.Y.
Fenster, Phyllis Rose	D.C.	B.S. 1948, Bucknell University	N.Y.
Fenton, Ann Mosener	D.C.	Finger, Frederick George	Va.
Fenton, Donald Roberts	D.C.	Fink, Donald	Va.
Fenton, Elizabeth Faulkner	D.C.	Fink, Hubert Steffie, Jr.	Va.
Fenton, Evelyn Roberts	D.C.	Fink, James Albert, Jr.	D.C.
Fenton, Patricia Joanne		Fink, Jules Verne	
A.B. 1952, The George Washington University		A.B. 1949, LL.B. 1952, The George Washington University	D.C.
Fenton, Paul Thomas	Md.	Fink, Zelman Simon	D.C.
Fenton, William Francis	D.C.	Finkel, Elaine Carol	Pa.
A.B. 1951, Texas Christian University		Finkel, Eugene Jay	Va.
Fenwick, Edward Gulager, Jr.	Va.	A.B. 1952, Swarthmore College	
A.B. 1950, University of Virginia		Finlay, Helen King	
Ference, Mary	N.J.	A.B. 1945, Huntingdon College	Calif.
Ferero, Edward George	Mich.	A.M. in Ed. 1947, The George Washington University	
Ferguson, Donald Edmond, Jr.	Va.	Finlayson, Margaret Nadine	
Ferguson, Everard Blackmore	Ala.	A.B. 1948, Pomona College	
Ferguson, James Halburn	Okla.	B.L.S. 1950, University of California	Conn.
Ferguson, William Holmes		Finn, John William	Pa.
B.S. 1948, University of Tulsa	Ohio	Finnan, Anne Mary	
Ferneau, Harry Robert	Pa.	A.B. 1941, B.S. 1944, Marywood College	Ill.
Ferraraccio, Francesco Paolo	R.I.	Finnegan, Richard Adams	
B.S. 1949, Elizabeth College		A.B. 1954, St. Louis University	
Ferreira, Anna Elizabeth		A.M. 1949, Catholic University of America	Va.
B.S. 1951, University of Rhode Island		Finnell, Albert Thomas	Va.
Ferrenz, Robert Tirrell	Md.	Finney, Barbara Jane	Va.
Ferris, Lula Frances	Va.	Finnigan, John Edwin	
Ferris, Norman Bernard	Va.	A.B. 1942, LL.B. 1948, Notre Dame College	D.C.
Ferro, Anthony Philip	D.C.	Finnorn, William Joseph	
Fetherolf, Mitchell William	Va.	B.S.F. 1951, Louisiana State University	V.
B.S. 1944, Muhlenberg College		Finnson, Torceir	Va.
Feula, James Joseph	N.J.	A.M. 1947, Oslo University	N.Y.
B.S. 1950, The George Washington University		Finta, Quinn	
Fey, Wayne Alvin	Md.	Fiorello, Philip	Md.
B.E. 1947, Yale University		A.B. 1950, Kent State University (Ohio)	D.C.
M.E. 1949, Johns Hopkins University		Firda, Richard Arthur	D.C.
Fickenscher, Edward Robinson Jr.	Ill.	Firnhaber, Frederick Stephen	Pa.
B.S. 1940, U. S. Naval Academy		First, Stanley Alfred	
Ficker, Charles Joseph	W.Va.	A.B. 1940, University of Miami	N.Y.
A.B. 1951, West Virginia University		Fischer, Harry Frederick, Jr.	
Feldman, Nicholas Andrew	N.Y.	B.S. 1947, U. S. Naval Academy	
Field, Pamela Bearshall	N.Y.	Fischer, Herbert S.	Tenn.
A.B. 1951, Bryn Mawr College		B.S. in E.E. 1948, University of Missouri	
Field, Tabatha	Va.	Fischer, Jerry Edward	D.C.
Felder, Margaret Ruth	D.C.	A.B. 1951, University of Texas	D.C.
Feldt, I. Olesha	Texas	Fischer, Josephine Lucille	D.C.
Feldt, Maryanna Pleviak	Va.	Fischer, Marilyn Lucille	Tenn.
Fide, Thomas W.	Texas	Fischer, Martin Nathaniel	
Fila, Cosetta Marie	Pa.	Fischer, Mary Jane	
Filipek, Joyce Scott	Va.	A.B. 1947, A.M. 1949, Rice Institute	N.Y.
A.B. 1948, University of North Carolina		Fischler, Kenneth Joseph	
Filipovic, Milenko	D.C.	B.S. 1952, Cornell University	
Filipowicz, Casimir Anthony	N.Y.		
Filsinger, Patricia Jean	Md.		
Filsinger, Ruth Isabel	Md.		
Finamore, Ardis Woodall	N.D.		
A.B. 1951, The George Washington University			

Fischman, Morton	Pa.	Flannery, William Edward	Va.
Fischman, Morton William	Va.	Flannery, John Francis	Ill.
Fish, James Monroe	D.C.	B.S. in E.E. 1950, University of Illinois	
B.S. 1948, College of William and Mary		Flannery, Joseph Patrick	D.C.
Fish, Janice Page	Md.	Flash, Edward Serrill	Va.
A.B. 1949, University of Utah		A.B. 1949, Cornell University	
A.M. 1952, University of Pennsylvania		M.P.A. 1950, Cornell University	
Fish, Jerome Sullivan	Ky.	Flather, Alfred Chester, Jr.	D.C.
A.B. 1951, Berea College		B.S. 1952, Wilson Teachers College	
Fishback, Kathleen	Md.	Fleming, Beverley Hawthorne	Va.
B.S. 1948, Lawrence	N.Y.	A.B. 1951, Berea College	
Fishline, Florence Claire	Fla.	Fleming, James Carlton	N.C.
Fisher, Katherine Harriett	N.C.	A.B. 1949, LL.B. 1951, Duke University	
A.B. 1945, University of North Carolina		Fleming, John Daly	D.C.
Fisher, Carl William	Ohio	A.B. 1929, University of New Hampshire	
Fisher, Clyde Lee	Mo.	Fleming, Robert James	Mass.
Fisher, Donald Vincent	D.C.	A.B. 1948, Boston College	
Fisher, Frank Marshall	Md.	Fletcher, Elsie Tompkins	Va.
B.S. 1944, U. S. Coast Guard Academy		Fletcher, Fernie	Md.
Fisher, Henry Estoroge	La.	Fletcher, John George	D.C.
A.B. 1952, The George Washington University		Fletcher, William Stone	Va.
Fisher, Janet Elizabeth	D.C.	Fleury, George Edward	Va.
Fisher, Kurt Fritz	D.C.	Fleury, Leonie Anne	Mass.
Fisher, William Benton, Jr.	Tenn.	Flickinger, Ida May	Va.
B.S. in E.E. 1946, Union College and University		A.B. 1931, Oberlin College	
B.S. in E.E. 1947, Massachusetts Institute of Technology		A.M. 1932, Columbia University	Ohio
Fisher, William T. Jr.	Va.	Flickinger, Ted Lawrence	
Fishman, Gerald Emmanuel	N.Y.	B.S. 1940, Western Reserve University	Md.
Fisher, Gordon Murray	D.C.	Flieger, Kenneth Hugh	Va.
Fiske, Clarence O.	Pa.	Flinn, Samuel Roy	Mass.
Fitch, Elsie	D.C.	Flint, George Marsh, Jr.	
Fitch, Harry John	Md.	A.B. 1940, Harvard University	
B.S. 1951, University of Maryland		LL.B. 1945, The George Washington University	
Fitch, Ralph G., Jr.	Md.	Flint, Helen Marrs	D.C.
AB. 1949, The George Washington University	Va.	A.B. 1941, Mount Holyoke College	
Fitzgerald, Marjorie Dorothy	D.C.	A.M. 1945, New York University	Pa.
Fitzgerald, Mildred Marie	Mass.	Flokey, Paul Jay	
Ed.B. 1925, Ed.M. 1928, Boston Teachers College		A.B. 1951, Lebanon Valley College	Md.
Fitzhugh, Howard Lee, Jr.	Md.	Flood, Maitland Kirk	Md.
A.B. 1943, University of Dubuque	Va.	Flood, Thomas Hayes	
Fitzpatrick, Benjamin John	D.C.	B.S. in Ed. 1936, University of Buffalo	
Fitzpatrick, Edward James	Pa.	A.M. in Ed. 1947, The George Washington University	
Fitzpatrick, George Rudolph	Pa.	Flores, Brian Lawrence	Va.
A.B. in Govt. 1951, The George Washington University		Flores, Irma	Kans.
Fitzpatrick, June	Pa.	Flores, Paul Stephen	D.C.
A.B. 1949, The George Washington University		A.B. 1948, Municipal University of Wichita	
A.M. 1952, American University		Flory, June Anne	N.J.
Fitzpatrick, Rita Agnes	Md.	Flowers, Earl Crama	Va.
Fitzwater, William Joseph	Md.	Floyd, John Phillip	Va.
Flaxinger, Ivan Welton	Md.	Floyd, Nathaniel C.	Va.
AB. in Govt. 1949, The George Washington University	Va.	Floyd, Shirley Margaret	D.C.
Flanagan, Daniel J., Jr.	D.C.	Floyd, Anna H.	Md.
A.B. 1949, Gannon College		Ed.B. 1944, Teachers College of Connecticut	
LL.B. 1951, Catholic University of America		Flynn, David Francis	Mass.
Flanagan, Francis James	D.C.	Flynn, Jeanette Mary	Wash.
B.Ch.E. 1938, Catholic University of America		Flynn, John Edward	Calif.
Flanagan, Thomas Gilbert, Jr.	D.C.	Flynn, Joseph Earl	Va.
		Flynn, Rana Helen	D.C.
		Flynn, Catherine Grace	Pa.
		Flynn, Thomas Sheridan	Ohio
		Flynn, Richard William	Md.
		Foehner, Scott Livingston	N.Y.
		B.S. 1949, University of Maryland	
		Foley, Judy Marilyn	D.C.
		Foley, Raymond	Pa.
		Foerster, Mary Agnes	

Foldenauer, Robert Carl	D.C.	Foster, George Samuel	Tenn.
Foley, Marie Garber	Va.	B.S.A. 1941, University of Tennessee	
B.S. 1949, Madison College		A.M. 1948, The George Washington	
Foley, Martin Francis	D.C.	University	Colo.
Folk, John William	D.C.	Foster, James Buck	
Follettstad, Robert Thor	Va.	B.S. 1952, Colorado Agricultural and	D.C.
A.B. 1947, University of California		Mechanical College	Va.
at Los Angeles		Foster, James Patrick	
Follien, Audrey Carol	Va.	Foster, M. Lorraine	D.C.
Follin, John Walker	Va.	B.S. 1958, Madison College	
A.B. 1947, Yale University	N.Y.	Foster, Mary Harwood	D.C.
Foltz, John Frederick	Md.	A.B. 1942, Hillsdale College	Md.
Fonseca, Gloria Margarita	Md.	Foster, Matthew Francis	Va.
Fonseca, Harold Antonio	Md.	Foster, Maxwell Kenyon	Fla.
Fontaine, Robert Richard	Md.	Foster, Nancy Helen	Okla.
Foot, Edward Eugene	Md.	Foster, Neale Strong	
Forbes, Merwin Bishop	Ga.	Foster, Neil Maurice	
B.S. 1942, Norwich University		B.S. 1950, Oklahoma Agricultural and	D.C.
A.M. 1946, Columbia University		Mechanical College	Va.
Forscht, Violet Juan	W.Va.	Foster, Paul Allen	
A.B. 1951, Fairmont State College		Foster, Robert Middleton	S.C.
Forcum, James Evans	Md.	A.B. 1934, University of Michigan	
A.B. 1950, The George Washington		Foster, Thomas Russell	
University	W.Va.	B.M.E. 1947, Georgia Institute	Va.
Ford, Ann Lou	Pa.	of Technology	Ohio
Ford, Austin Joseph		Foulke, James Edwin	
B.S. 1942, Pennsylvania State		Foulke, Charles William	D.C.
Teachers College, East Stroudsburg		A.B. 1949, Ohio State University	Md.
M.S. 1947, University of Pennsylvania		Foust, Betty Jean	
Ford, Betty Boyle	Wis.	Foutty, Harold Allan	Nev.
A.B. 1950, The George Washington		A.B. 1948, Glenville State College	
University		Foutz, Hal Bert	Va.
Ford, Dolores Jane	D.C.	A.B. 1954, Brigham Young University	
Ford, Eugene Francis	D.C.	Fowler, Marion Vance	
A.B. in Govt. 1951, The George		A.B. 1940, College of William and	D.C.
Washington University		Mary	
Ford, Jean E.	D.C.	A.M. 1952, Harvard University	
Ford, John Joseph	D.C.	Fowler, Naomi Daniels	Va.
A.B. 1949, The Catholic University		A.B. 1953, University of North	W.Va.
of America		Carolina	Va.
Ford, Margaret Anne	D.C.	Fox, Barbara Anne	Pa.
Ford, Robert Nelson	Md.	Fox, Barbara Jean	
Ford, Robert Vincent	Mich.	Fox, Charles Robert	
Foreman, Joan Maxine	D.C.	Fox, Helen	
A.B. 1951, University of Pennsylvania		A.B. in Ed. 1947, A.M. in Ed. 1949,	N.J.
Forester, Joseph Elwood	D.C.	Ed.D. 1943, The George Washington	Va.
University		University	D.C.
Forman, Ovid Thomason, Jr.	Va.	Fox, John Ignath	
Formoso, Edward Lawrence	Md.	Fox, Prudence Elizabeth	
B.S. 1951, U. S. Merchant Marine		Fox, Robert Dayton	Md.
Academy		A.B. 1952, University of Southern	
Forry, John Emerson	Va.	California	
B.S. in M.E. 1940, Oklahoma		Fox, William Lloyd	D.C.
Agricultural and Mechanical		A.B. 1941, A.M. 1946, Western	Fla.
College		Reserve University	Va.
Forsberg, Robert Andrew	Md.	Fox, William Raymond	
B.S. 1947, University of Maryland		Fox, Dora Hegman	Brazil
Forster, Anne Burton	Fla.	Fox, Edward James, Jr.	
A.B. 1952, Sweet Briar College		A.B. 1949, University of Texas	
Forster, Rudolph	D.C.	Fox, Albert Carlos Santos	Ohio
Forster, Stanley Albert	D.C.	A.B. 1944, University of Brazil	D.C.
Fortney, Eleanor Judy	Va.	A.M. 1947, University of Minnesota	D.C.
A.B. 1949, Fairmont State College		Franchini, Joseph	Md.
Fortney, Hunter Eugene	Va.	Franchini, Helen J.	
A.B. 1948, Fairmont State College		Franchini, Betty Lee	D.C.
Fortunato, Aldo	D.C.	Frane, James Hartwell	Va.
Forward, Myron Hal	Va.	A.B. 1951, St. John's College	Va.
Forwe, Rose	Ohio	Franchino, Genevieve N.	D.C.
Foss, Patience Sheila	D.C.	Franchino, William McCafferty	Va.
Foster, Anne Newton	Md.	Francisco, Anne R.	N.Y.
A.B. 1958, Henderson State Teachers		Frank, Glenn Herbert	
College (Ark.)		Frank, Charlotte Louise	
Foster, Beatrice Michelson	Va.	Frank, Eva E.	
		A.B. 1951, Vassar College	

Frank, Joseph A.B. 1935, A.M. 1936, Columbia University	Md.	Freeman, Abraham Freeman, Horatio Putnam B.S. 1947, Dickinson College	D.C. Md. N.C.
Frank, Richard P. Frank, Rose Madalene Frank, Stuart Hall Frankel, Abraham B.S. 1933, Brooklyn College Frankford, 1941, Cooper Union	Mass. Wis. D.C. N.Y.	Freeman, Jack Miller A.B. 1949, Florida Southern College Freeman, James Monroe Freeman, Jo Fisher A.B. 1920, University of Arizona A.M. 1927, Harvard University	N.C. Va. D.C.
Frankford, Lawrence Ronald Franklin, Alfred Carl A.B. 1949, University of Virginia Franklin, Beatrice Browne B.S. 1941, Mary Washington College	Okla. Ohio Va.	Freeman, Lucy Alexander Freeman, Marian Virginia B.S. 1948, M.S. 1949, The George Washington University	N.C. Del.
Franklin, Daniel Tobias Franklin, Edwin Abbott, Jr. Franklin, Jean Ardenes Franklin, Jordan B.S. 1946, Worcester Polytechnic Institute	D.C. D.C. Md. Mass.	Freeman, Mary Gray Freeman, Naomi Regelson Freeman, Patricia Brydon Freeman, Richard Man A.B. 1949, University of Chicago A.B. in Govt. 1952, The George Washington University	D.C. Conn. D.C. Ill.
Franklin, Philip E. A.B. 1949, The George Washington University	D.C.	Fredericson, Elizabeth Frensh, Harold Richard French, Dorothy E. B.S. 1947, University of Vermont	D.C. Md. D.C.
Franklin, Rufus Matteson B.S. 1947, Massachusetts Institute of Technology	R.I.	French, Dorothy Marie French, Frank Senda, Jr. French, James Hoagland, Jr. A.B. 1952, West Virginia University	W Va. Md. W Va.
Franko, Diane A.B. 1950, University of Nevada	D.C.	French, Orville Sidney French, Carolyn Frances Frendzel, Don James Frigot, Elizabeth Strachan B.B.A. 1942, Tulane University L.L.B. 1950, The George Washington University	Colo. N.Y. D.C. Va.
Franko, George William Franko, Georgia Franko, E. Lorraine A.B. 1951, Mary Washington College	Nev. D.C. Va.	Freese, John Henry B.S. 1948, University of Notre Dame L.L.B. 1951, Georgetown University	Ill.
Franko, John Henry Franko, Mary Virginia Franko, Donald Ross B.S. 1952, University of Toledo Franko, Edsel Mickey A.B. in Govt. 1952, The George Washington University	Minn. Ohio D.C. Mich.	Freese, Phyllis Langfitt A.B. 1950, The George Washington University Freudenberg, Maxwell Charles B.S. in E.E. 1948, University of Illinois	D.C. Md.
Franko, Ruthanna A.B. 1951, The George Washington University	D.C.	Freese, Rudolf Charles A.B. 1949, University of Maryland	Md.
Franko, Agnes Ann Franko, Margaret Lenora A.B. 1950, Huntington College Franko, Anna Kathryn A.B. 1947, Smith College Franko, Forrest Thompson B.S. 1950, University of Virginia Franko, Wilford Wayne B.S. 1949, University of Oregon Franko, Harold Hayes A.B. 1950, A.M. 1951, Temple University	D.C. D.C. Ala. Va. Va. Oreg. Md. Md.	Freese, James Frederick Frickel, Robert Scott Fried, William Frederick, Jr. B.S. 1952, Pennsylvania State College Friedlander, Ida Ruth A.B. 1951, The George Washington University Friedlander, Blaine Pevser A.B. 1948, University of Virginia Friedlander, Florence H. Friedman, Eve R. A.B. 1948, Brooklyn College Friedman, Katherine Shapiro A.B. 1947, Hunter College Friedman, Lewis Samuel L.L.B. 1946, LL.M. 1950, New York University Friedman, Reuben B.Ch.E. 1949, College of the City of New York A.M. 1950, Columbia University	Va. Va. Pa. D.C. D.C. Va. N.Y. Va. D.C. D.C.
Franko, Margaret Long A.B. 1950, Sweet Briar College Frederick, Arthur John Frederick, Robert Martin Frederick, Angelo Retrad A.B. 1950, West Virginia University Frederman, Joyce Louise Frederman, Judith Michele A.B. in Ed. 1951, The George Washington University	D.C. N.Y. D.C. D.C. D.C.	Friedrich, Julia T. A.B. 1942, University of Tennessee Friedrichs, Mary Julian Friend, Robert Marion Fris-Spensen, Bente Frisbee, Madeline L.	Ala. Va. Va. D.C. D.C.

Frisbie, Kenneth Walden A.B. in Ed. 1934, The George Washington University Ed.M. 1942, University of Maryland	Md.	Funkhouser, Claude B.S. in M.E. 1943, University of Missouri	Md.
Frishman, Fred A.B. 1947, College of the City of New York	Md.	Funkhouser, Curtis Lee Funston, Chester Clifford Funston, Edward Hogue Furey, Ann Gloria	Kent. Kent. D.C. Calif.
Frishman, Samuel E. Frith, Raymond John A.B. 1941, Bucknell University	N.Y. Va.	Furlong, Patricia Lydon Furlow, William Loomis A.B. 1949, Carleton College	Mich. Md.
Fritz, Bernard James Fritti, Tullio Giovanni Frobisher, Dianys d'Arcy Froehlich, Frede Franklin B.S. 1945, U. S. Naval Academy	Va. Va. D.C. Nev.	Furman, Mary Eddy A.B. 1942, Vassar College Furtner, Ralph William Fusillo, Matthew H. B.S. 1948, University of Maryland	Va. Md. D.C. Md.
Froehlich, Madonna Marie Frohman, Alice Patricia A.B. 1943, Wellesley College	Iowa D.C.	Futrovsky, Charles Jerome Futterman, Sidney B.S. 1950, M.S. 1952, The George Washington University	Va.
Frost, Jack Arthur Fruin, Florence Esther Frushtick, Howard Fry, George Edward A.B. 1941, The George Washington University	Calif. N.J. N.J.	Fuzzell, Betty Ann	
Fry, Marian Louise Fry, Roy Alexander A.B. 1950, Iowa College	D.C. N.Y.	G	Pa. Ky.
Fryberger, Elbert Lee B.S. 1924, U. S. Naval Academy M.S. 1930, Harvard University	Colo.	Garbados, John Newton Gabbert, John Sterett Crittenden B.S. 1946, U. S. Naval Academy	Pa. D.C.
Frye, Charles Edward, Jr. Frye, Margaret Fulton A.B. 1947, Berea College	W.Va. D.C.	Gable, Robert Barth Gabriel, Eleanor Jane Gabriel, James Louis Gaddis, Robert Eugene Gadonas, Pauline Joan Gagler, Francis Xavier, Jr. Gagnon, John A. B.S. 1942, Arnold College	Va. Md. Md. Md. D.C. Va.
Fryer, Freda Thurman Frisklund, Dorothy F. A.B. 1941, University of Minnesota	Va. D.C.	Gahres, Edward Elias B.S. 1950, Rutgers University M.S. 1951, The George Washington University	Va. Md.
Fuchs, Fred Fuchs, Henry Fuchs, Walter Henry Fuchs, William Francis Fuentes, Gilberto Cantu Fuzate, Wilbur Lindsay A.B. 1934, Davidson College LL.B. 1937, University of Virginia LL.M. 1951, The George Washington University	N.Y. Va. Ind. D.C. Texas Va.	Gailbreath, Mary Nell Gaine, Betty Teresa A.B. 1950, Trinity College Gaine, Virginia M. B.S. 1941, Chestnut Hill College Gaines, Thomas Barrett Gale, David Ireland A.B. 1951, Catholic University of America	Md. Md. D.C. Md.
Fuhrer, Neil Leonard Fuhrmann, Leo Aloisius, Jr. Fulcher, Robert Clinton, Jr. A.B. 1940, The George Washington University	D.C. D.C. Md.	Gale, Thomas Boyle B.S. 1917, U. S. Naval Academy Gall, John Christian, Jr. B.S. 1940, Yale University	D.C. Md.
Fulford, Nathaniel Simmons Fulk, Bernard B., Jr. Fulks, Ruth Diane Fuller, Carol Yvonne Fuller, Constance Jane B.S. 1949, Purdue University	D.C. D.C. Md. D.C. Md.	Gallagher, Carol Thompson A.B. 1951, Pennsylvania State College Gallagher, Eugene Bennett A.B. 1940, Lehigh University Gallagher, Harriet Blanch Gallagher, Jack William Gallagher, James Frederick Gallagher, Joan Marietta Gallagher, Laurie Anne Gallagher, Mary Cromwell A.B. 1921, University of Arizona	Va. D.C. Md. N.Y. Va. D.C. Ariz. D.C. Mich.
Fuller, Frank Gardner B.S. 1910, Aurora College A.M. in Ed. 1947, The George Washington University Fuller, Vernon Jack B.S. 1921, University of Maryland	N.C. D.C.	Gallant, Arthur Gallant, Myra K. A.B. 1940, B.Mus. 1950, Ohio Wesleyan University	Ohio
Fuller, William Elliott B.S. 1944, U. S. Coast Guard Academy Fullerton, Gay Fulmer, Ward Glenn, Jr. Fulton, Mary Bailie B.S. 1943, M.S. 1944, Columbia University	N.J. Va. Ohio Md.	Gallant, Thomas Francis A.B. 1950, Ohio Wesleyan University Galler, Herman Gallier, Anna Finch Gallinek, Wilfred Ernest A.B. 1951, Syracuse University	D.C. D.C. D.C.
Funger, Morton Irving Funk, Richard Hodges	Md. Kent.		

Gallivan, John Daniel III B.M.E. 1943, Catholic University of America	Va.	Garlock, Robert Austin A.B. 1949, Union College	Va.
Galloway, Donald Charles	Md.	Garm, Philip Jacob	Va.
Galloway, Richard Warren	N.Y.	A.B. 1948, Pennsylvania State College	
Gallun, Phyllis Deloris	D.C.	Garmany, Hugh Barbay	Md.
Gallup, Elizabeth Hale	D.C.	A.B. 1952, University of Maryland	
A.B. 1952, The George Washington University		Garner, Charles Louis	Nev.
Gallup, Nancy Ruth	Conn.	B.S. in E.E. 1947, University of New Hampshire	
Galt, Lowell T.	D.C.	Garner, Frances Lewis	Va.
Galsom, William Michael	Md.	B.S. 1928, Mary Washington College	
Gamble, Alvin Fountain	Maine	Garner, Frederick Reed, Jr.	D.C.
A.B. 1951, University of Maine		Garner, I. D.	Va.
Gambel, Sergius	D.C.	B.S. 1947, Guilford College	
A.B. in Govt. 1952, The George Washington University		Garner, Leona Freida	D.C.
Gamble, Elise Miles	Va.	Garner, Robert Wright	Md.
A.B. 1951, Hollins College		Garner, Suzanne S. T.	D.C.
Garnes, Jeanne Frances	D.C.	Gartner, Yancey Holmes	Md.
Garnmeter, Gloria Grace	Ill.	Gatto, Kenneth James	Va.
Gardner, John Leo, Jr.	Va.	Garrard, Helen Cora	D.C.
Gano, Paul	Pa.	Garrett, Lewis Fletcher	Va.
Gantz, Jack Morris	D.C.	A.B. 1949, Coe College	
Gaspard, Richard Farrand	D.C.	Garrett, Mary E.	D.C.
Gaspinski, William George	N.Y.	Garrett, William Donaldson	D.C.
B.S. 1947, Union College		Garrison, Anne Elizabeth	Va.
Gasper, Barbara Sawyer	Md.	A.B. 1947, Oklahoma College for Women	
Gashland, Edward Vartgas	Md.	Garrison, Donald Carroll	Va.
Gashert, Eugene James	Wis.	Garrison, Lynn Willard	Md.
B.S. 1950, University of Wisconsin		Garrison, Milton E.	Va.
Garcia-Caraveo, Alfonso Ramon	Mexico	Garro, Edward Joseph	Nev.
A.B. 1950, New York University		Garthoff, Vera Alexandrovna	Va.
Garcia, Manuel Gilberto	Md.	Garland, Alice Johnson	Va.
A.B. in Govt. 1949, The George Washington University		Garver, Clifford Elliott	S.D.
Garcia, Rafael A.	Puerto Rico	A.B. 1953, The George Washington University	
A.B. 1951, University of Puerto Rico		Gaskell, Richard Mullen	D.C.
Garcia, R. vera, Joan	D.C.	Gaspard, Richard Joseph	Pa.
Garcia, Robert Courtney	Fla.	Gaskaway, Alexander Ramsey	Pa.
B.S. 1949, University of Florida		A.B. 1950, University of Virginia	
Garcia, Wilma Forsell	D.C.	Gasser, Emmett Clark	Iowa
Gardella, John Sylvester	Va.	A.B. 1951, St. Mary's College of California	
B.S. 1949, M.S. 1950, University of Pennsylvania		Gasser, Robert Louis	D.C.
Gardner, Alfred Wilfr. Jr.	Ill.	A.B. 1948, University of Denver	
B.S. 1947, U. S. Naval Academy		Gassett, Mattyela	D.C.
Gardner, Arthur Perry	Wash.	B.S. 1949, University of Alabama	
B.S. 1943, University of Washington		A.M. 1948, University of Georgia	
Gardner, Barbara Helen	Va.	Gaston, Judith Anne	D.C.
Gardner, Benjamin III II	La.	Gates, Helen Cole	D.C.
A.B. 1951, West Virginia University		Gates, Nancy Lee	Va.
Gardner, Leander Carl, Jr.	D.C.	Gaudet, Richard Austin	Mass.
B.S. 1949, Utah State Agricultural College		B.S. in M.E. 1947, University of Rochester	
Gardner, Robert Elwood	Utah	Gaudin, Anthony Carl	N.Y.
Gardner, Robert R.	D.C.	B.S. 1942, University of Wisconsin	
B.S. 1941, Southern Illinois University		Gauth, Mildred Cassandra	D.C.
Garcia, James Leon	Ill.	A.B. 1946, Converse College	
B.S. 1952, The George Washington University		Gaus, Thomas Francis	Pa.
Garhart, Bernard Howard	D.C.	Gawse, Emmet Mullen	Va.
B.S. in Ed. 1948, Pennsylvania State Teachers College, Slippery Rock		Gautier, Eduardo Emilio	Va.
Garkin, James Edwin III	Va.	A.B. 1950, Marshall College	
Garland, William Arthur	Md.	Gauvain, Arthur	Mass.
Garlington, Philip C.	Calif.	Gaver, Donald Paul	D.C.
A.B. 1947, University of Montana		B.S. 1950, M.S. 1951, Massachusetts Institute of Technology	
A.M. 1942, University of California		Gavrisheff, Michael Boris	D.C.
		A.B. 1952, Mexico City College	
		Gay, Pearl Louise	N.C.
		Gavda, Walter Frank	N.J.
		Gayer, John H.	D.C.
		B.S. in E.E. 1943, University of Nebraska	

Gaylord, Charlene Elizabeth	D.C.	German, Waldo Ross	Md.
Gaylord, Isabelle Ruth	D.C.	Germeten, Elise	Norway
Gaynor, James Kenneth	Ind.	A.B. 1941, University of Oslo	D.C.
B.S. 1946, J.D. 1950, Indiana University		Germova, Lola Patricia	D.C.
Gayzur, Rudolph Joseph	N.Y.	Gesock, Charles Richard	D.C.
B.S. 1952, University of Maryland		Gerow, Lee Saunders	D.C.
Garda, Doris Joyce	D.C.	B.S. 1913, Virginia Military Institute	D.C.
Gearhart, James Edward	D.C.	Gerry, Martin E.	
Geary, Daniel Joseph	Va.	B.E.E. 1948, M.E.E. 1952, Polytechnic Institute of Brooklyn	Va.
Gebhard, Katharine Louise	D.C.	Gersdorff, Sonja Amelia	
Geddes, Donald Grant III	Md.	A.B., B.S. 1951, Radford College	N.Y.
Gedney, Plater Tayloe	D.C.	Gershenson, Leo Eli	
Geer, Helen Fern	D.C.	B.B.A. 1942, College of the City of New York	Md.
Geer, Howard Stark, Jr.	N.Y.	Gertz, Albert Edward	Mass.
Geer, Wesley Harmon	Calif.	Gervonayco, Ronald Thomas	Va.
A.B. 1951, University of California at Los Angeles		Gerwing, William Joseph	Md.
Geslin, Ernest L.	Ga.	Geschickter, Charles Freeborn, Jr.	Md.
Geluing, Dorothy Louise	D.C.	Geschickter, Edmund Harrison	Va.
Gehringer, Edward Charles	Md.	Geserick, Harry Clarence	D.C.
Geiser, Herbert George	Wis.	Gesner, Richard John	D.C.
Geiser, Jesse Browning	Md.	Gettings, Theresa Anne	
Geisinger, William Robert	Ohio	B.S. in Ed. 1931, Massachusetts State Teachers College, Worcester	Md.
A.B. 1910, Dartmouth College		Gewirtz, Edwin Norman	
Gekker, Paul	Md.	A.B. 1952, University of Maryland	Mich.
A.B. in Govt. 1948, A.M. in Govt. 1949, The George Washington University		Ghysels, Rosalyn Maude	D.C.
Gelacka, Ronald Edward	D.C.	Giancoli, Mary Ann	Va.
Gelland, Babette	Md.	Giannini, Vera	Calif.
Gellis, Marcia Helen	Va.	Giannitsis, John Demetrios	Arie.
Gellman, Thelma Ann	Va.	Gibbins, Kathryn Joanne	
Gemeny, William Gordon	Md.	Gibbins, Raymond Jacobus	Conn.
A.B. 1951, University of Maryland		A.B. 1952, Stanford University	Md.
Gemmell, John Donald	Pa.	Gibbons, Florence Katherine	Va.
Gendron, Norman Hubert	Va.	Gibbons, Maybelle Elizabeth	
B.S. 1950, College of the Holy Cross		Gibbs, Anna McLawhorn	
Generelly, Richard Fleury	D.C.	A.B. 1940, East Carolina Teachers College	Md.
Genovese, Frank Anthony	N.J.	Gibbs, Julian Glenwood, Jr.	D.C.
Gentile, Augustine	Md.	Gibbs, Richard Sanborn	Mo.
Gentry, Joseph Wesley	Va.	Gibby, John Francis	
A.B. 1945, University of North Carolina		A.B. 1940, B.S. 1952, University of Missouri	Va.
Gentry, Penick	Va.	Gibby, Mabel Kuncie	
A.B. 1950, Longwood College		A.B. 1945, Park College	
George, Betty Lou	D.C.	A.M. 1947, McCormick Theological Seminary	
George, Desmond Alvis	Va.	Ed.M. 1951, Ed.D., 1952, University of Missouri	Va.
B.S. 1941, Stephen F. Austin State Teachers College		Giberson, Howard Samuel	Md.
George, Elsa Louise	D.C.	A.B. 1911, Harvard University	Pa.
George, Henry Lewis	D.C.	Giblio, William Peter	D.C.
George, James	Mass.	Gibney, Edith Cecelia	Md.
B.S. 1948, Northeastern University		Gibson, Alva Dana, Jr.	Nev.
George, Josephine	Md.	Gibson, Carol Krieger	
George, Lynn Darcy	Va.	Gibson, Charles Cornelius	Ala.
George, Myron Don	Kans.	A.B. 1950, University of Nevada	Md.
Georjevitch, Theodore Alexander	Va.	Gibson, Margaret G	
Geraci, Frank Jerome, Jr.	Md.	Gibson, Rachel French	Va.
Geran, Ruth Iris	Calif.	B.S. 1943, University of Maryland	
A.B. 1944, American University		Gielemann, Marion Steel	D.C.
Gerard, Richard	Mo.	B.S. 1941, University of Wisconsin	Va.
B.S. 1940, Kansas State College		Gielatowski, Jane Frances	Pa.
Gerber, Harriet May	N.Y.	Gieske, Robert Anthony	D.C.
B.S. in Ed. 1947, New York State College for Teachers, Buffalo		Giesler, Dick Porter	D.C.
Gerber, Jane Mathilda	D.C.	Giffin, Cleda Arlene	Calif.
Gerhard, Edmund James	Va.	Giglio, William Peter	
A.B. 1950, The George Washington University		Gikas, Thomas	N.Y.
Gerhold, William Franklin	D.C.	B.S.F.S. 1947, Georgetown University	Md.
Gerken, Catherine Ann	Va.	Gilbard, Burton B	
German, Robert Lee	Md.	Gilbert, David McCalvey	
B.S. 1951, University of Maryland			

Gilbert, George Milton A.B. 1949, The George Washington University	Fla.	Ginsburg, Roland Eugene A.B. 1947, L.L.B. 1950, University of Michigan	Ohio
Gilbert, James Eastham	Va.	Ginsburg, Ronald Armand	D.C.
Gilbert, Robert Wayne	Wyo.	Giokaris, James Daniel	Mo.
Gilbert, Stanley Ormand	D.C.	Giordano, Anthony Sam	D.C.
Gilbreath, Francis Marion	Md.	A.B. 1952, University of Maryland	
Gilbreath, Gereda Edith	Ala.	Gipple, Jim William	Va.
Gildenborn, Herbert Joseph	D.C.	Giraldi, Almerigo	Md.
Giles, Dolores Marie	Va.	Giulami, Andrew Joseph	D.C.
Giles, Olan Gallaspy	Miss.	B.S. 1948, Georgetown University	
Giles, Patricia Anne	Md.	Giuliano, A. Charles	N.J.
Gilliam, James McCracken, Jr.	Va.	B.S. in M.E. 1952, University of Wyoming	
Gill, Charles Richard	Md.	Girman, Joan Isabelle	D.C.
A.B. 1952, Lafayette College		Giner, Harold Walter	Va.
Gill, Edgar Allan, Jr.	Md.	Gittlin, Joseph Norman	Pa.
B.S. 1952, Fairmont State College	D.C.	A.B. 1951, University of Pennsylvania	
Gill, Rowland Pearson	La.	Gitter, Lena L.	D.C.
A.B. 1940, Louisiana Polytechnic Institute		Gittleton, Ralph Leonard	N.H.
Gillard, William Henry	Pa.	Giuffrida, Robert Thomas	D.C.
A.B. 1950, The George Washington University		A.B. 1940, A.M. 1950, University of Rochester	
Gilles, Anita Marie	Mich.	Giusti, Natalie	Mass.
A.B. 1946, University of Michigan		Gjupanovich, Fran Nicholas	D.C.
Gillespie, Constantine John	D.C.	Glasener, Philip Judson	Va.
A.B. 1952, The George Washington University		Glaser, Abraham Albert	D.C.
Gillespie, Elizabeth R.	Ky.	Glaser, Joan Florence	D.C.
Gillespie, George John	D.C.	Glaser, Marilyn	Va.
A.B. 1952, The George Washington University		Glaser, Melvin William	Ohio
Gillespie, Harold Stanley	Va.	B.S. in Ed. 1951, Ohio State University	
Gillespie, Noel Rod	Oreg.	Glaser-Shalmy, Ivan Paul	Va.
A.B. 1952, Reed College		LL.D. 1953, Comenius University	
Gillette, William Miller	Fla.	Glaser, Stanley	Md.
B.S. 1952, Florida State University		Glasgon, Lawrence Gray	D.C.
Gilliam, Shirley Marie	D.C.	B.S. 1948, Montana School of Mines	
Gilliam, Paul Edwin	N.C.	Glass, George William	D.C.
Giles, Margaret Palmer	Va.	A.B. 1948, Rice Institute	
Gilliland, Pearl Evelyn	D.C.	Glass, Marie Maull	D.C.
B.B.A. 1951, University of Minnesota		A.B. 1944, Dunkerton College of the Holy Cross	
Gillum, Parvin Douglas	Ky.	A.M. 1945, Johns Hopkins University	Va.
A.B. 1951, Dartmouth College		Glasser, Ruth Hammond	D.C.
Gillis, David Murray	Md.	Glattstein, Alexander	Va.
B.S. in B.A. 1951, Georgetown University		Glavin, Ann Gwyneth	D.C.
Gillis, Harry Arthur, Jr.	Ohio	Glaze, E. Cleon	D.C.
A.B. 1942, Ohio Wesleyan University		Gleazier, Anne Andren	D.C.
A.M. in Govt. 1950, The George Washington University		Gleason, M. Jacqueline	D.C.
Gill, Wellington Albert	D.C.	A.M. 1951, Catholic University of America	
A.B. 1946, University of Alabama		Gleason, Robert Lee	Va.
Gilman, Leonard Dan	D.C.	Gleason, Ruben Galicia	Mexico
Gill, Louis Catlin	D.C.	Glekas, Louis John	D.C.
B.F.E. 1952, The George Washington University	Va.	Glenn, Dorothy May	Va.
Gillum, Frederick Easton		Glenn, Leo Clarence	Ill.
Gilmore, Ferd Marvin	Va.	Glenn, William Bainbridge	D.C.
Gilmore, Francis John	Mo.	B.S. 1950, Yale University	
A.B. 1951, Georgetown University	D.C.	Glover, Elmer Llewellyn	D.C.
Gilreath, James Edson		Glover, James Edward	Va.
Gilroy, Lillian Rebecca	Ala.	Glover, Monte LeRoy	D.C.
Gister, Eulah Gene	Va.	Gloyd, Mary Caroline	D.C.
Ginebra, Oscar Guarita	D.C.	A.B. 1951, The George Washington University	
Gingrich, Clyde Robert	Va.	Gluscevic, Lincoln Ivan	D.C.
Ginsberg, David Kellner	Md.	Glynn, Andrew Martin	N.Y.
A.B. 1951, The George Washington University		Gochenour, Marian Elizabeth	Md.
Ginsburg, June	D.C.	Glicks, John Joseph	D.C.
		Godfrey, Earl Stephen	D.C.
		B.B.A. 1950, University of Wisconsin	
		Godliken, Marian Agnes	Iowa
		A.B. 1952, State University of Iowa	
		Godley, Gladys Gandy	Va.
		B.S. 1942, Radford College	

Godshalk, John Leonard	Md.	Goldstein, Leon George	N.J.
B.S. 1938, Pennsylvania State Teachers College, West Chester		A.B. 1946, A.M. 1949, University of Pennsylvania	N.Y.
Goedeke, Milton Thomas	Md.	Goldstein, Robert Bernard	D.C.
B.S. 1941, University of Maryland		Goldstein, Sheila Evelyn	D.C.
Ed.M. 1949, Johns Hopkins University		Goldstein, William Zanvil	Ky.
Goemiat, Edward John	D.C.	Goldupp, Ocea Clare	Va.
A.B. 1951, The George Washington University		Goldwire, Jennie Fowler	
Goens, Julien Raymond	D.C.	Golembe, Carter Harry	
Goering, Friedrich Ludwig	D.C.	A.B. 1946, A.M. 1947, Ph.D. 1952, Columbia University	D.C.
Goever, Joseph Nicholas	Va.	Golin, Gerald	
Goff, Cynthia Ann	Md.	A.B. in Govt. 1953, The George Washington University	Va.
Gocarty, John Edward	Md.	Golia, Joseph Francis	Ill.
B.S. 1952, University of Maryland		Golliher, Robert Howard	
Goggin, Henry Waldo	N.J.	B.S. 1949, A.M. in Ed. 1951, Washington University	D.C.
B.S. in P.E. 1952, The George Washington University		Golomb, Phyllis	Va.
Gohn, George Milton, Jr.	Md.	Golovin, Nicholas E.	
Gostein, Civana Marnina	D.C.	A.B. 1954, A.M. 1956, Columbia University	Md.
Gold, Lewis	D.C.	Golub, Abraham	
Goldbaum, Annette Davis	D.C.	A.B. 1941, Brooklyn College A.M. 1949, University of Delaware	Md.
Goldberg, Alvin Irving	D.C.	Gomhart, Audrey Lucille	D.C.
B.S. in Ed. 1941, Boston University		Gonzalez, Abraham Murray	Cuba
Goldberg, Arthur Lanier	D.C.	Gonzalez, Enrique	
Goldberg, Bernice Elizabeth	Md.	Dr. Civil Laws 1947, Havana University	Cons. Rica
Goldberg, David Elliott	Md.	Gonzalez, Jorge	Mont.
Goldberg, Helen Faith	D.C.	Gonzalez, Rudy	Va.
Goldberg, Howard Owen	Md.	Good, Carl Edward, Jr.	D.C.
B.S. 1951, University of Maryland		Goodall, Thelma L.	Va.
Goldberg, Mildred Apter	D.C.	Goodhue, Cornelia Evans	
Goldberg, Ronald	D.C.	Goodman, David Gerson	
Goldberg, Stanley	D.C.	B.S. 1947, New Jersey State Teachers College, Trenton	Tenn.
B.S. 1949, A.M. 1950, New York University		A.M. 1953, New York University	Va.
Goldberg, William	N.Y.	Goodman, David Louis	
B.S. 1948, New York University		Goodman, Harold Jacob	Wash.
Goldbranson, Donald Robert	D.C.	A.B. 1952, University of Richmond	D.C.
Goldens, Edgar Dean	Nehr	Goodman, Leo Andrew	
Goldens, Joseph Carroll	Tenn.	Goodman, Thomas Abraham	
B.S. 1948, Tennessee Polytechnic Institute		B.S. 1947, New York State Teachers College, Boro'o	Ohio
Gold, L.B. 1948, University of Tennessee	N.J.	A.M. 1949, Columbia University	
Golden, Joseph Seymour	D.C.	Goodman, William Henry, Jr.	Md.
Goldenberg, Alyse Sylvia	D.C.	B.S. 1948, U.S. Merchant Marine Academy	
Goldenberg, Jacqueline Rose		Gooding, Lyman Evans, Jr.	N.Y.
A.B. 1951, The George Washington University		B.S. 1952, U.S. Merchant Marine Academy	Va.
Goldenberg, Jerome Albert	Va.	Goodrich, Bernard Arthur	Md.
Goldenberg, Melvin Myron	D.C.	Goodridge, Adlene Hammett	Va.
B.M.E. 1949, Catholic University of America		Goodrich, Alan	Ohio
Goldenthal, Edwin Ira	Md.	Goodsell, Neil Walter	
B.S. 1952, The George Washington University		Goodson, Luke Russell	Tenn.
Golder, Jacob Victor	Va.	A.B. B.S. 1917, University of Oklahoma	Okla.
B.S. 1930, A.M. 1940, Boston University		Goodspeed, Franklin Brown	Va.
Goldin, Sylvan Lippman	D.C.	Goodwin, George Edward	Md.
Golding, Harold Frederick	Va.	B.S. 1938, U.S. Naval Academy	
B.S. 1931, University of Richmond		Goodwin, Greenlee	D.C.
Goldman, Esther Charlotte	D.C.	Goodwin, Paul Russell	
Goldman, Gerald Jack	Va.	B.S. 1941, University of Maine	
Goldman, Martin	D.C.	Gould, Louise Stewart	D.C.
Goldman, Sherman H.	Mass.	A.B. 1947, The George Washington University	N.Y.
B.S. in M.E. 1949, Northeastern University		Gouth, Walter Edwin	D.C.
Goldman, Thomas Adler	D.C.	Goway, Stanley, Joseph	N.D.
A.B. 1930, Harvard University		Gowen, Yvonne Mary	
Goldman, William Allen	D.C.	Gowen, Charles Francis	
Goldsmith, George Ray	D.C.	B.S. 1947, U.S. Naval Academy	
Goldsteen, Robert Harold	D.C.		
Goldstein, Edward	D.C.		
Goldstein, Jack Mark	D.C.		

Gordon, Albert B.M.E. 1944, College of the City of New York	Va.	Grabowski, Alice June	D.C.
Gordon, Alexander Rola		Grabowski, Jeanne	D.C.
Gordon, Andrew Jackson	Va.	Gracias, Denis Francis	India
Gordon, Angela Lucia	Ohio	Grady, John Joseph	D.C.
Gordon, David McCall	Minn.	A.B. 1950, A.M. 1951, Catholic University of America	
Gordon, Doris Hecht	Ill.	Grady, Joseph William	Md.
Gordon, Elizabeth Claire	Va.	Grady, Thomas Burton	Md.
Gordon, Everett Mathews	D.C.	Graf, Virginia Louise	D.C.
Gordon, Forest	D.C.	Gragan, Philip Arthur	D.C.
A.B. 1952, The George Washington University	Md.	Graham, Felder Sharpe	Ga.
Gordon, Harry Carl		Graham, Gretchen Lou	Conn.
Gordon, Helena Elizabeth	Md.	Graham, Jack Louis	Calif.
Gordon, Howard Leo	D.C.	A.B. 1940, Stanford University	
B.S. 1948, Georgetown University	Fla.	Graham, Kenneth Donald	Wash.
M.S. 1949, The George Washington University		Graham, Lucile Eleanor	Vt.
Gordon, Lester Howard		B.S. 1920, Cornell University	
A.B. 1949, The George Washington University	Mass.	M.B.A. 1948, Stanford University	Pa.
Gordon, Raymond Joseph		Graham, Robert Charles	Calif.
B.S. 1948, Georgetown University	Md.	Graham, Robert Randall, Jr.	
Gordon, Ruby Nell		B.S. 1941, U. S. Naval Academy	
Gordon, Shirley Ruth	Va.	B.C.E. 1946, M.C.E. 1947, Rensselaer Polytechnic Institute	D.C.
Gore, James Andrew	D.C.	Graham, William Griffith	
Gore, James Andrew		B.S. 1946, U. S. Naval Academy	Va.
Gore, J. J. Smart	Va.	Graham, William Montrose	
Gore, John William	D.C.	A.B. 1940, University of Virginia	N.Y.
A.B. 1947, Shepherd College	D.C.	Grainick, Paul Philip	
A.M. in Ed. 1950, The George Washington University	Va.	A.B. 1940, Brooklyn College	Conn.
Gori, Montanelli, Riccardo		Grammatice, Marie Antoinette	N.M.
D.D.S. in Law, 1940, University of Florence, Italy	D.C.	Grammer, David Allen, Jr.	Ala.
Gorman, Anna Hilda		B.B.A. 1947, University of Texas	
Gorman, Saul Robert		Granberry, William Alvin	
Gormley, Robert Joseph		B.I.E. 1949, Georgia Institute of Technology	Md.
A.B. 1947, Michigan State College	Wis.	Grandstaff, Helen Bell	Mass.
Gossell, Florence Faye	Va.	Grant, David Franklin	
B.S. 1949, University of Chicago	N.Y.	B.S. 1950, University of Vermont	Va.
Gossel, Robert Maurice	D.C.	Grant, Pauline Murray	Md.
Gossel, Kenneth Samuel	Md.	Granville, John Matthew	
A.B. 1951, The George Washington University	Va.	B.S. 1937, Cornell University	N.J.
Gottfried, David	Nebr.	Grasso, Michael	
B.S. 1949, Brooklyn College		B.S. 1946, Bucknell University	Vt.
Gottlieb, Marvin Irving	D.C.	Graves, Arthur Leslie, Jr.	Ind.
A.B. 1947, New York University		A.B. 1948, Norwich University	Ala.
M.S. 1949, The George Washington University	Va.	Graves, Elbert Dale	
Gould, Eleni		B.S. 1948, Indiana University	
Gould, Susan Cornelia Jones	D.C.	Graves, Eugene Hamster, Jr.	Ala.
B.S. 1948, The George Washington University	D.C.	L.L.B. 1950, University of Alabama	Va.
Gould, Burton M.		Graves, George Wallace	D.C.
A.B. 1949, Roosevelt College	Ill.	Graves, Phyllis M.	
A.M. 1951, University of Chicago		A.B. 1950, Hunter College	Va.
Gould, George Marvin	Md.	Graves, Walter Albert	
Gould, Joseph Charles	Fla.	A.B. 1941, A.M. 1942, Syracuse University	D.C.
Gould, Lawrence G.	Mass.	Gravette, Marian Maxine	
B.S. 1949, Benton	Md.	A.B. 1940, University of Iowa	Va.
Gould, Warren	D.C.	Gravette, Dwight Lee	
A.B. 1951, The George Washington University		A.B. in Govt. 1948, The George Washington University	D.C.
Gowley, Barbara Joan	Va.	Gray, Ann Anathia	Del.
B.S. 1947, University of Scranton	Md.	Gray, Charles Conwell	D.C.
Grabfield, Dora Murray	Mass.	Gray, Damon Charles	Va.
A.B. 1950, Smith College		Gray, Edwin Fay	Ky.
		Gray, Edythe Asher	D.C.
		Gray, George Howard, Jr.	
		A.B. 1950, The George Washington University	Md.
		Gray, George Paul	
		A.B. 1952, Franklin College of Indiana	

Gray, Hazel Ida	Mo.	Greenberg, Bernard	D.C.
B.S. 1911, Central Missouri College		A.B. 1948, University of Massachusetts	MA
A.M. 1949, George Peabody College for Teachers		Greenberg, David Leonard	MA
Gray, John Alexander	D.C.	Greenberg, Miriam Naomi	DC
A.B. 1951, Dartmouth College		Greenberg, Phyllis Sandra	DC
Gray, John Arthur	Md.	Greenburg, Jean Goldman	
Gray, Joyce Harrell	Va.	A.B. 1947, LL.B. 1949, Cornell University	Va
A.B. 1939, East Carolina Teachers College		Greene, Caroline Brandon	MA
Gray, Lawrence James	Va.	Greene, Charles Allison, Jr.	MA
Gray, Loretta Audrey	Va.	A.B. 1936, University of California at Los Angeles	MA
A.B. 1945, University of Michigan		Greene, Donald Robert	DC
Gray, Maude Lewis	Mich.	Greene, Frank Philip	DC
B.S. 1916, Michigan State College		Greene, Frank Wesley	MA
Gray, Norman Hamblin	Va.	Greene, Gary Edward	Va
Gray, Richard David	Va.	Greene, Harold Herman	
Gray, Robert Alan, Jr.	Pa.	Greene, Harris Carl	Va
Gray, Robert Fremont	Va.	B.S. 1941, Boston University	
B.A.A. 1946, M.B.A. 1948, University of Michigan		Greene, Katherine Virginia	
Gray, Robert Reed	N.Y.	A.B. 1947, Eastern Nazarene College	Va
A.B. 1945, Dartmouth College		A.M. 1948, The George Washington University	DC
LL.B. 1948, Harvard University		Greene, Mabel Jean	DC
Gray, William Mason	D.C.	Greene, Margaret Payne	DC
A.B. 1952, The George Washington University		B.S. 1942, Stetson University	DC
Grabbeal, Janice Evelyn	D.C.	Greene, Marion Elizabeth	DC
Grayson, Saranelle	D.C.	Greene, Mayte Boylan	
Graziano, Frank Joseph	Md.	A.B. 1930, Goucher College	DC
B.S. 1940, U. S. Naval Academy		LL.B. 1931, Columbia University	
M.S. 1945, Massachusetts Institute of Technology		Greene, Nita Eugenia	
Greaver, Vernon Elmer	Va.	B.S. 1941, Catholic University of America	Va
A.B. 1951, The George Washington University		Greene, Robert Ellis	N.Y.
Greaves, Thomas Francis	Va.	Greene, Walter Scott IV	N.Y.
A.B. 1951, Occidental College		Greene, Walter Scott III	Utah
Greco, Gertrude Mary	Va.	B.S. 1932, Syracuse University	
A.B. 1945, Brooklyn College		Greener, Richard Leroy	N.Y.
Greeley, Alicia Christopher	D.C.	A.B. 1950, University of Tennessee	N.Y.
Green, Allene Goad	Md.	Greenfield, Julius William	
A.B. 1926, Mississippi State College for Women		Greenhouse, Samuel W.	N.H.
Green, Audrey	D.C.	B.S. 1918, College of the City of New York	DC
Green, Edward Harrison	D.C.	Greenley, Donna Jean	MA
B.S. in P.E. 1951, The George Washington University		Greenstreet, Stewart Wilmore	MA
Green, Gerald	Va.	Greenville, George Walker	Okla
Green, Harold Arnold	Md.	Greenwood, Sara Tressler	Va
Green, Jack Allen	Md.	Greenwood, Thurman Bodeau	Va
Green, Jayne Westerfield	Va.	Greet, Beatrice Seville	
A.B. in Ed. 1940, Arizona State College		Greer, Harry Holt, Jr.	IN
Green, John Taylor	Miss.	B.S. 1914, U. S. Naval Academy	DC
A.B. 1940, Louisiana State University		Greer, Mildred M.	
LL.B. 1945, University of Richmond		Greer, Thomas Jefferson, Jr.	Va
Green, Joseph Anthony	D.C.	B.S. in Eng. 1950, The George Washington University	DC
Green, Joseph John	Md.	Greer, John Jay III	Va
B.S. 1950, Georgetown University		Greene, Myron	
Green, Mabel Hernan	D.C.	Gregg, John Gerald	Conn.
Green, Mildred	D.C.	B.S. 1933, J.D. 1936, New York University	
A.B. in Ed. 1920, A.M. 1915, The George Washington University		Gregory, Katherine	MA
Green, Norman	N.Y.	A.B. 1948, Bryn Mawr College	MA
Green, Philip Lee	D.C.	Gregory, Krikor Ohannur	N.Y.
Green, Robert Hansen	Utah	Gregory, Mary Ann	Va
Green, Robert William	D.C.	Gregory, Thomas	
Green, Stanley Keith	Va.	A.B. 1940, New York University	
Green, William James, Jr.	Md.	Greig, Leslie MacLachlan	Calif.
Greenbaum, Irving	Va.	B.S. 1945, United States Coast Guard Academy	N.Y.
B.S. 1942, New York University		Greiner, Carolyn Margaret	
A.M. 1950, Columbia University		Greiner, Edwin	
		B.S. 1940, College of the City of New York	

Greisman, Sol M.	Ill.	Groenheim, Henri Arnold	Md.
Gress, Ralph Herbert	Fla.	A.B. 1950, Pennsylvania State College	
Gresser, Evangeline Wilson	Md.	Groening, Ralph Edward	D.C.
A.B. 1950, The George Washington University		A.B. in Govt. 1949, The George Washington University	
Greydanus, Herbert William	Calif.	Groom, Audrey Ann	Va.
B.S. 1948, University of Redlands		Gross, Herbert Samuel	D.C.
M.S. 1950, Stanford University		Gross, Jo Ann	Va.
Griffen, Robert Edmund	W Va.	Gross, Robert Victor	Pa.
Griffie, Robert Lawrence	D.C.	A.B. 1949, University of Tampa	
Grier, Floyd John	Pa.	Gross, Sidney Ralph	Ill.
Gress, Sally Wuritzer	Ohio	Grossman, Harold A.	N.Y.
A.B. 1952, Smith College		A.B. 1946, New York University	
Griffie, Robert William	Md.	Grossman, Phillip	N.Y.
Griffin, Charles Nacey, Jr.	D.C.	B.S. 1951, New York University	
Griffin, David Burton, Jr.	Md.	Grossman, Rochelle	D.C.
B.S. 1940, University of Virginia		Groat, Kathryn Jean	D.C.
Griffin, Donald Talmadge	Va.	Grouge, Albert Joseph	Pa.
A.B. 1925, Cornell University		Grouleff, Paul Henry	N.J.
Griffin, James Arthur	Va.	B.S. 1952, U. S. Naval Academy	
Griffin, James Ellsworth	Mich.	Grove, Richard Nelson	Pa.
Griffin, Lindon Larkin	Va.	Groves, Donna Jeannine	Va.
Griffin, Mary Patricia	Md.	Groves, Gerald Richard	Va.
Griffin, Oliver Francis	Calif.	A.B. 1951, The George Washington University	
Ph B. 1941, Loyola University		Grubb, Edna Stutler	D.C.
Griffin, Robert Julian	Ga.	A.B. in Ed. 1951, The George Washington University	
Griffin, William Joseph	D.C.	Gruen, Robert Leonard	N.J.
Griffin, Willard Earl	D.C.	Gruis, Edward George	Ind.
A.B. in Govt. 1950, The George Washington University		B.S. 1940, M.S. 1951, Purdue University	
Griffins, Richard Hundley	Va.	Grunfelder, Conrad, Jr.	Ind.
Griffis, Edna Burke	Va.	Grunley, Martin Robert	Md.
Griffith, Elizabeth Jane	D.C.	B.C.E. 1958, College of the City of New York	
Griffith, Elizabeth Margaret	D.C.	Grunsten, Russell Carl	Fla.
Griffith, Elwynne Mae	D.C.	Grunwell, Robert Lockwood	D.C.
A.B. 1926, De Pauw University		Grusky, Reuben	N.Y.
Griffith, Lera Evelyn	Va.	Ph.B. 1918, Yale University	
Griffith, Shirley Paulding	Pa.	Gruver, Donald Robert	D.C.
A.B. in Govt. 1951, The George Washington University		Gruver, Richard Ralph	Va.
Griffiths, Joseph Lewis	Va.	Grzeskiewicz, John Joseph	D.C.
B.S. 1941, Northwestern State College		B.S. in Ed. 1950, Wilson Teachers College	
Griffiths, Muriel Elaine	Okla.	Guancioni, Luigi	Italy
Grishby, James Robert	Va.	Guarco, Barbara Ann	D.C.
Grisham, Rudolph St. George	D.C.	Guarino, Eleanor Diana	N.Y.
B.S. in F.S. 1952, Georgetown University		Gude, Gilbert	Md.
Grimes, Clay Lyle	Miss.	B.S. 1948, Cornell University	
B.S. 1946, Mississippi College		Guenther, Louis Charles	Va.
M.S. 1951, Vanderbilt University		A.B. 1954, Southwestern College	
Grimes, James Foster	Va.	A.M. 1938, University of Pittsburgh	
Grimm, Florence Irene	Pa.	Guerrero, Joaquin Castro	Guam
Grimm, Patricia Joan	Md.	Guest, Mary Juanita	Va.
Griner, Ludlow Leonidas	Va.	Guest, Lillian	Pa.
Grisamore, Nelson Thomas	Md.	Guggenheim, Marjorie Gibson	D.C.
B.S. 1948, M.S. 1950, University of Illinois		Guibeen, Anne Theresa	Mass.
Grizard, Kathryn	Tenn.	A.B. 1950, University of Massachusetts	
B.S. 1911, University of Tennessee		Guibert, Yvonne Louise	Calif.
Grisham, Ethel Marguerite	Colo.	A.B. 1946, Stanford University	
Grissold, Gale Charles	Calif.	Guild, Samuel Murton	Va.
A.B. 1925, A.M. 1926, Stanford University		Guilday, Peter Lawler	D.C.
Griswald, Victoria Strauss	Va.	Guiler, Debbie Ruth	D.C.
A.B. 1940, University of Alabama		Guimaraes, Aluisio	Nebr.
Gritz, Sidney Benjamin	D.C.	Guinan, Warren Alonzo	
Grob, Victor Edward	D.C.	A.B. 1941, University of Nebraska	
Grodsky, James Wilbur	D.C.	Guina, James Terrell	Ark.
B.S. 1943, Georgia Institute of Technology		Gulbrandsen, Elli	D.C.
		Gulick, Helen Ramsey	Va.
		A.B. 1952, Oberlin College	

Gulick, Richard Ivan	Md.	Hagedorn, Robert Lee	Md.
B.S. 1945, U. S. Naval Academy		Hagen, Robert Henry	Va.
Gullett, John Hungertord	Va.	Hagenbucher, John Thomas	
LL.B. 1948, The George Washington University		B.S. 1950, Philadelphia College of Pharmacy and Science	
Gunther, John Joseph	D.C.	Hager, Harriet Jean	Me.
A.B. 1947, University of Kansas		Hagerty, George A. J.	N.Y.
Gunther, Shirley Mae	Md.	Hagerty, Mary Ann	D.C.
B.S. 1949, Washington College		Haggart, Ronald D.	D.C.
Gustafson, Patricia Chase	Mass.	Haggerty, John Aloysius, Jr.	Va.
A.B. 1950, Mount Holyoke College		Haggerty, Robert Lee	Va.
Guterman, Herman E.	Fa.	Haglund, Richard Forsberg	
A.B. 1943, University of Scranton		Hagood, Kathleen	
Guthrie, Louis Thomas	D.C.	B.S. 1951, Rensselaer Polytechnic Institute	D.C.
A.B. 1950, M.S. 1952, Pennsylvania State College		Hahn, David Boston	Va.
Guthrie, William Joseph, Jr.	Mass.	Hahn, Margaret Eleanor	D.C.
Gutkin, Jay Bernard	N.Y.	Haight, Dorothy Irene	
Gutt, Robert Leonard	N.J.	B.S. 1952, University of North Carolina	D.C.
Guy, Herbert Smith, Jr.	Fla.	Hailey, Donald Allen	Md.
A.B. 1949, University of Florida		Haines, Frances Marble	D.C.
A.M. 1950, University of Michigan		Haines, Neil Keith	Va.
Guy, John Andrew	D.C.	Haina, Ada Louisa	Conn.
A.B. 1928, A.M. 1930, Columbia University		Haina, Amelia Day	N.C.
J.D. 1931, New York University		A.B. 1950, Bryn Mawr College	
Guymon, Roy	Ill.	Haithcock, Maynard Kitchen	
Guytinglo, Diosado de la Fuente	Philippines	B.S. 1949, The George Washington University	
LL.B. 1949, University of Santo Tomas		Hajek, Virginia Ann	N.Y.
Guzak, Peter Daniel	D.C.	Hakim, Theodore William	D.C.
Guzman, Ramon Enriquez	D.C.	Hakimi, Abdul H.	
Guzzetta, Victor Louis	N.Y.	B.S. in M.E. 1953, University of Miami	Mass.
B.S. 1951, Canisius College		Halbert, Jessie Dawn	D.C.
Gwynne, Edmund Chalfant	Fa.	Hale, Aletha Ann	Va.
		Hale, Julia Bowen	Me.
		Hale, Lester Turner	Fa.
		Halev, Musa	
		A.B. 1951, Temple University	Va.
		Haley, Louis Albin	Md.
		Haley, Pauline Louise	Va.
		Haley, Violet Lowry	N.J.
		Halicka, Mary Magdalynne	Conn.
		Halish, Walter George	
		A.B. in Govt. 1949, The George Washington University	Fa.
		Hall, Anna Campbell	Va.
		Hall, Audrey Doney	Va.
		Hall, Bettie Ormsby	D.C.
		Hall, Charles Llewellyn	Va.
		Hall, Charles Wilbur	
		B.S. 1950, University of North Carolina	D.C.
		Hall, Cora Lee	Fa.
		Hall, David Alan	
		Hall, Glenn Leslie	
		A.B. 1949, Lebanon Valley College	Min.
		Hall, Harriet Ellen	Va.
		Hall, James Aldrich, Jr.	W.Va.
		Hall, James Ray	
		B.S. 1948, West Virginia University	Va.
		Hall, Jane Harriman	
		A.B. 1952, Mount Holyoke College	Va.
		Hall, Jane Joubert	Md.
		Hall, John Travis	N.C.
		Hall, Julianne	Va.
		Hall, Nathan Gray	Va.
		Hall, Patricia Ruth	
		Hall, William Henderson	
		A.B. 1952, The George Washington University	D.C.
		Hall, Wilton Earle, Jr.	Md.
		Halla, Walter Robert	Conn.
		Haliberg, Frederick Carl	

Halliday, Eva Bollinger	Va.	Hancock, James Lanier	D.C.
A.B. 1949, Glenville State College		Hancock, Nell	Tenn.
Hallinan, Tessence Griffin	Va.	Hancock, Norma Louise	Texas
B.S. 1950, University of Florida		Hand, Harold Ronald	Pa.
Hallman, Clarence Kenneth	Va.	B.S. 1952, Franklin and Marshall College	
Hallowell, Ruth E.	N.Y.	Handley, James Richard	Md.
A.B. 1950, Rochester University		Hanes, Melvin Edward	Md.
A.M. 1951, Syracuse University		Haney, Anne Rose	D.C.
Hallquist, Norman Jerome	Colo.	Haney, Donald	N.C.
Halow, Iva	Md.	Haney, Earle, Jr.	D.C.
Halow, Joseph	Md.	Haney, Joanne Alexander	D.C.
Halow, Mary	Md.	Hatmer, Frank Joseph	N.Y.
Hapert, F. David	Md.	B.S. 1938, New York University	
A.B. 1952, University of Maryland		A.M. 1939, Columbia University	
Hapert, Harold Louis	Md.	Hann, William Donald	D.C.
B.S. 1929, Massachusetts Institute of Technology		B.S. 1942, Wash. Teachers College	
Haley, David	N.H.	Hanna, Patricia Elizabeth	Va.
Hamaguchi, Akira	Hawaii	Hannan, William Everett, Jr.	Va.
A.B. 1952, University of Hawaii		A.B. 1929, Dartmouth College	
Hamann, Henry Fredrick	Colo.	Hanning, Lyman Miller	D.C.
Ph.B. 1945, University of Wisconsin		Hannis, Willie Lucille	N.C.
Hamasian, Reuben	D.C.	Hannon, Martin John	N.Y.
Hansen, Dana Harmon	Tenn.	Hannon, Mary E.	D.C.
A.B. 1949, The George Washington University		Hansbarger, William Henry	Va.
Harbidge, Dorothy Cooke	Md.	A.B. 1947, University of Maryland	
A.B. 1942, Adelphi College		Hansel, Roger Elmer	D.C.
Hansb, Mary Louise	Okla.	Hansen, Melvin Robert	Nehr.
Hansen, Rockford Norris	W.Va.	Hansen, Orval Howard	Idaho
Hamilton, Anna Branthwaite	Va.	A.B. 1936, University of Idaho	
Hamilton, Elizabeth Terry	Va.	Hansen, Richard Williams	D.C.
Hamilton, James Andrew	Iowa	Hansen, Rodney Val	Nehr.
Hamilton, John Calvin, Jr.	Va.	Hanson, Barbara Elizabeth	D.C.
Hamilton, Iva	D.C.	Hanson, Elmer Leroy	Va.
Hamilton, Peter	D.C.	Hanson, Frank Omar	Mich.
Hamm, Beatrice Mae	D.C.	B.S. 1931, University of Utah	
Hamm, Charles Sherman	Va.	Hanson, Palmer Oliver, Jr.	Minn.
A.B. 1946, A.M. 1947, The George Washington University	Md.	B.S. 1934, University of Minnesota	
Hammach, Gloria Mae	D.C.	Hanson, Walter Fritzol	Conn.
Hammann, Louis Mary	D.C.	A.B. 1942, University of Connecticut	
Hammer, Gerald William	Ind.	Hanson, William Bert	Md.
A.B. 1939, Ball State Teachers College		B.Ch.E. 1944, M.S. 1949, University of Minnesota	
Hammer, Janice Mayhew	Va.	Hanyok, Andrew	Md.
A.B. 1945, Roanoke College		Hanyok, Joseph	Md.
Hammer, Richard Wilson	Iowa	Hanyok, Stephen	Pa.
A.B. 1951, State University of Iowa		Haraban, Margaret Patricia	D.C.
B.S. 1951, University of Michigan	D.C.	Haron, Hilda Gay	Va.
Hammerstone, Mark Leo	Pa.	Harbaugh, George Harold	D.C.
A.B. 1948, University of Rochester	N.Y.	A.B. 1948, Rutgers University	
Hammond, Bobue Dean		Harben, Luther Alvin	Va.
A.B. 1951, The George Washington University	D.C.	A.B. 1942, Oglethorpe University	
Hammond, Mary Ewing	Ga.	Harbert, William Eugene	Md.
B.C.S. 1939, University of Georgia		Harbold, William Kemp	Va.
Hammond, Noel Bailey	Md.	A.F. 1950, The George Washington University	
B.S. 1949, University of Pittsburgh	D.C.	Harde, Charles Francis	Conn.
Hamon, Beverly Jean	D.C.	Harden, Marilyn Louise	N.J.
Hampson, William Joseph	D.C.	B.S. 1930, Tufts College	
Hampson, Vincent Varonian	D.C.	Hardesty, John Franklin, Jr.	D.C.
A.B. 1950, M.S. 1951, Wayne University	Mich.	A.B. 1950, Washington and Lee University	
Hampton, Barbara Mae	D.C.	Hardesty, Robert Louis	Mo.
Hamrick, James Dudley	W.Va.	Harde, Della Phaece	Fla.
Hamrick, Lillian Aline	Va.	Harde, Mary Indolynn	Fla.
A.B. 1945, University of Chattanooga Teachers		Harde, John Andrew	Va.
A.B. 1941, George Peabody College for Teachers		Harde, Frances Boone	Ohio
A.B. 1942, Western Maryland College	Md.	A.B. 1952, Denison University	
		Harda, Phyllis Valerie	D.C.
		Hardwick, John Webster	Md.
		A.B. 1950, University of North Carolina	
		Hardy, Charlotte Ruth	W.Va.
		Hardy, Harry Milton	Honduras

Hardy, Mary Jean	Va.	Harris, Stanley P.	D.C.
Hare, Ruby Evelyn	N.C.	A.B. 1932, Queens College	D.C.
Harenberg, Donald Clarence	Va.	Harris, Waldo	Va.
Hargett, Louis Thomas	Va.	Harris, William Clayton, Jr.	N.C.
Hargraves, Philip Clifford	Mass.	Harris, Willie Lucille	Md.
Haringer, Albert Michael	Va.	Harrison, Alexander	D.C.
B.S. 1936, The George Washington University		Harrison, Allen Edward	Va.
Harkins, Annie Ruth	Ala.	Harrison, Allen Hugh, Jr.	Va.
Harlan, Gloria Brown	Md.	Harrison, Edgar Lockhart II	Va.
Harley, John Key	Ky.	Harrison, John Houston, Jr.	Va.
Harlinger, Frederick Joseph	N.Y.	A.B. 1946, University of Virginia	Va.
B.S. 1935, U. S. Naval Academy		Harrison, John Millard	D.C.
Harnel, Morton Wilham	Md.	Harrison, Junius Henry	Va.
B.S. 1943, Wilson Teachers College		Harrison, Marion Edwyn II	Va.
Harmon, Frederick Gardner	D.C.	A.B. 1951, University of Virginia	D.C.
Harmon, Marcia Joan	D.C.	Harrison, Peggy Scott	
Hammett, Joan Helen	Va.	Harrison, Robert Scott	
Harper, Curtis Paul	Ala.	A.B. 1951, The George Washington University	D.C.
Harper, James David	Ala.	Harrison, Thelma Winifred	D.C.
Harper, Jayne Frances	D.C.	Harrison, Virginia W.	Md.
Harper, Jesse Harper	Va.	Harris, George Latham	
B.S. 1949, Rider College		B.S. 1917, U. S. Naval Academy	Va.
Harper, Jim Robert	D.C.	Hart, Charles Arvel	
Harper, Joan Gano	Calif.	B.S. 1942, Wake Forest College	Ark.
Harper, William Rusque	Ky.	Hart, Elton Edward	Calif.
Hartrell, Anne Carol	D.C.	Hart, Frank Edmond	
Hartrell, David Cathcart	Va.	B.S. 1948, University of San Francisco	Md.
Hartrell, Richard Lumbrick	D.C.	Hart, Jerome Phillip	N.J.
Harrigan, John Thomas	N.J.	Hart, John Thomas	
Harrigan, Lucille Frasca	Md.	B.S. 1951, Rutgers College	D.C.
A.B. 1951, Barnard College		Harte, Phyllis Jacqueline	D.C.
Harrington, Donald Joseph	Mich.	Hartery, William Edward	Mo.
B.S.E. 1946, University of Michigan		Harting, William Mollet	
L.L.B. 1951, University of Detroit		B.S. in C.E. 1947, Washington University	Va.
Harris, Anne	Texas	Hartley, Edwin Alexander	
A.B. 1949, Texas College of Arts and Industries		Ph.B. 1939, L.L.B. 1949, Dickinson College	D.C.
Harris, Benjamin Thompson	Va.	Hartley, Hugh Harris	D.C.
Harris, Bernard	N.Y.	Hartley, Janet Wilson	
B.B.A. 1946, College of the City of New York		B.S. 1949, University of Maryland	
Harris, Bertha Elaine	N.C.	M.S. 1951, The George Washington University	Va.
Harris, Bertha Florence	D.C.	Hartley, Richard Artman	Ill.
Harris, Boyd Edward	D.C.	Hartman, Lila Lynn	Pa.
Harris, Charles Joshua	D.C.	Hartman, Richard Dowd	
Harris, Charles Williams	Md.	A.B. 1951, Lebanon Valley College	Calif.
Harris, Donald Alvan	Wyo.	Hartman, William Joseph	Del.
Harris, Elmore Dewite	D.C.	Hartnett, Maurice A. III	
B.S. in E.E. 1933, West Virginia University		A.B. 1951, University of Delaware	D.C.
Harris, Forest Klaire	D.C.	Hartzell, Robert Harry	
Harris, Gordon King	N.C.	B.S. 1949, Pennsylvania State Teachers College, Lock Haven	Md.
Harris, Jackson Greene, Jr.	Va.	College, Lock Haven	Va.
A.B. 1947, East Carolina Teachers College, Greenville		Hervey, Barbara Sillars	D.C.
Harris, John Warton, Jr.	Wis.	Harvey, Herbert	Md.
A.B. 1950, University of Wisconsin		Harvey, Joseph Spencer	D.C.
Harris, Joseph Michael	Va.	Harvey, Helen Jean	D.C.
Harris, Martha Jane	D.C.	Hasalova, Milica Jelinaveta	Mass.
B.S. 1942, University of Pittsburgh		Hash, Samuel Lee	D.C.
Harris, Mary Alice	Mo.	Haskell, Warren James	
Harris, Mary Margaret	Ark.	Hassan, Hassan Abdel Hamid	D.C.
Harris, Miles Fitzgerald	Va.	B.Com. 1948, Foud I University, Cairo, Egypt	
B.S. 1944, New York University		Hassan, Salah Eldin	
Harris, Richard Sutherland	D.C.	B.Com. 1944, M.Com. 1946, Foud I University, Cairo, Egypt	Mass.
Harris, Robert Dermot	Va.	Hassett, Ennis James	Ind.
Harris, Robert Early	D.C.	A.B. 1952, Boston University	Va.
B.B.A. 1947, Texas College of Arts and Industries		Hasefurther, Harold	Va.
A.M. in Gen. 1949, The George Washington University		Hastings, Frieda Mae	
		Hastings, Jane Quillan	Va.
		B.S. 1942, Mary Washington College	
		Hastings, William Leonard, Jr.	

Haston, Charles Lynn	Tenn.	Hayhoe, Paul Albert	D.C.
Hatch, Albert Haig	Pa.	Haymaker, George Russell	Va.
A.B. 1927, University of Pennsylvania		Haymore, Lester D.	Utah
LL.B. 1933, Temple University		A.B. 1951, Brigham Young University	
LL.M. 1951, The George Washington University		Hayne, Robert Lowell	Md.
Hatch, Lawrence Worth	Va.	A.B. 1946, College of William and Mary	
B.S. 1950, Madison College		Haynes, Alton Myles	N.C.
Hatch, Robert Neil	Md.	A.B. 1940, University of North Carolina	
Hatcher, Natalie Margaret	D.C.	Haynes, Curtis Franklin	D.C.
B.S. in B.A. 1949, Alabama Polytechnic Institute		Haynes, Heilen Hanford	D.C.
Hathfield, LeRoy Jonathan	N.Y.	Haynes, Samuel Merrell	Va.
Hathfield, Norman Lee	Va.	A.B. 1949, Georgetown College	
B.S. 1951, University of Chattanooga		Haynes, Susan Oden	Md.
Haugan, Gertrude Marian	D.C.	Haynie, Thomas Marsh	Va.
Haugto, Tore	N.Y.	A.B. 1950, Randolph-Macon College	
Haugh, William Leo	Pa.	Hays, Irene Louise	Md.
B.S. 1948, Pennsylvania State Teachers College, Shippensburg		Hays, James Robert	W Va.
Hauke, Mary Elizabeth	Va.	Hays, Jesse Roland	D.C.
Hauptman, Sidney	D.C.	Hays, Richard Leland, Sr.	Kans.
B.S. 1949, College of the City of New York		Hays, William Quay	Fla.
Hauptman, William Francis	Md.	B.S. in Eng. 1950, University of Miami	
Haus, Leonard	Pa.	Hayth, William Donald	Md.
B.S. 1949, LL.M. 1951, University of Pittsburgh		Hayworth, Harold Richard	Va.
Hausner, Joseph John	N.Y.	B.S. in B.A. 1947, Florida Southern College	
A.B. 1951, University of Rochester		Hazard, Gerald Hartley	D.C.
Hausman, Howard Jay	N.Y.	B.S. 1947, U. S. Merchant Marine Academy	
A.B. 1950, College of the City of New York		Hazelbaker, Marion Waldo	D.C.
A.M. 1942, New York University		A.B. 1952, Stanford University	
Hausmann, John Henry	Pa.	Hazen, Ralph Edward	Pa.
Hausner, John Burns	D.C.	Hazlett, Barbara Ann	D.C.
Havens, Elmer G.	D.C.	Hazlett, Patsy Collins	Md.
Havens, William Dodge	Va.	Head, Robert Vincent	D.C.
B.S. 1950, The George Washington University		Healy, John Matthew	Ohio
Haverstein, Paul Lieder	Mass.	B.S. 1950, University of Notre Dame	
B.S. 1941, U. S. Naval Academy		Healy, Paul Thomas	W Va.
M.S. 1950, Massachusetts Institute of Technology		Heaps, Norman Arthur	D.C.
Haverty, Anne Margaret	D.C.	Heard, Townsend	D.C.
Hawa, Marvin Fraim	N.J.	Hearn, Alexander M.	Mo.
Hawkins, Ethel Crew	Va.	LL.B. 1951, The George Washington University	
A.B. 1925, A.M. 1938, University of North Carolina		Heath, Daniel William, Jr.	Va.
Hawkins, Eve Friedell	D.C.	Heatherly, James Clark	D.C.
Hawkins, James Walter	N.J.	A.B. 1950, University of Tennessee	
A.B. 1951, Rutgers University		Heaton, Elizabeth Rounceville	Va.
Hawkins, Nancy Teagarden	Va.	Heatwole, David Stanley	D.C.
Hawkins, Thomas Joseph Jules	Oren.	Heurlet, Theodore Willard	Md.
A.B. 1936, University of Portland		Hebb, Betty Ann	D.C.
Hawley, James Chester	Wash.	Hebert, Paul Edmond	Mass.
A.B. 1942, Mills College	D.C.	A.B. 1950, The George Washington University	
Hawthorne, Charles Byrd	Va.	Hecht, Irving Mark	Md.
B.S. 1949, The George Washington University		B.B.A. 1947, College of the City of New York	
Hay, James Everette	Tenn.	Heck, John Henry	Pa.
B.B.A. 1950, University of Georgia		A.B. 1941, Pennsylvania State College	
Hay, Sydney William	Mass.	A.M. 1951, The George Washington University	
Hayakawa, Kenneth Kiyoshi	D.C.	Heckert, Jackson Shaffer	Md.
Hayden, Inger Hvoeif	D.C.	B.S. 1942, Pennsylvania State College	
Hayden, James Howard	Md.	Heckman, Francis Austin	Pa.
A.B. in Govt. 1950, The George Washington University		B.S. 1950, Lebanon Valley College	
Hayer, Cornelius John	Conn.	Hedgcock, Russell Harland	Wash.
A.B. 1950, Yale University		B.S. 1948, U. S. Naval Academy	
Hayes, Walter Harold, Jr.	Vt.	M.S. 1944, Massachusetts Institute of Technology	
A.B. 1948, University of Vermont		Hedges, Margaret Houser	D.C.
		Hedges, William Elbridge	Mass.
		B.S. 1951, Tufts College	

Hedlund, Mark Wayne	Minn.	Helwege, Claire Eleanor	Va.
A.M. 1951, University of Minnesota		Helzner, Manuel Louis	Mass.
Hedrich, Albert Louis	Md.	A.B. 1950, The George Washington University	Pa.
Hedrick, Betty Mae	Va.	Hendershot, Lawrence Raymond	D.C.
A.B. 1952, The George Washington University		Henderson, Bowie Byrd	D.C.
Hedtke, Kenneth Arthur	Minn.	Henderson, Clotilda	D.C.
A.B. 1949, University of Minnesota		Henderson, Edna	N.C.
Heelen, John Edward	D.C.	A.B. 1939, Brooklyn College	
Hellner, Anne Morris	Va.	Henderson, Edna May	N.Y.
A.B. 1947, University of North Carolina		B.S. 1935, Western Carolina Teachers College	Md.
Hellner, Charles Duvall, Jr.	Md.	Henderson, Frances Anne	
Hege, John Henry	Pa.	A.B. 1937, Barnard College	
A.B. 1938, Gettysburg College		Henderson, Hanford Mead	
M.D. 1943, Hahnemann Medical College and Hospital		A.B. 1940, Haverford College	Fla.
Hegg, Haldis Hazel	D.C.	A.M. 1947, University of North Carolina	Mass.
Heglar, Erastus Jerome	Va.	Henderson, Jackielean	
A.B. 1929, Catawba College		Henderson, Jean Marie	D.C.
Hendenthal, Dorothy Elinor	D.C.	B.S. 1952, Simmons College	D.C.
Heider, Barbara Kay	Ohio	Henderson, Lyn	Va.
Heider, George Charles, Jr.	Md.	Henderson, Russell Stewart	Va.
B.S. 1950, University of Maryland		Hendrick, Barbara Diane	Mass.
Heisetz, Elaine Fox	D.C.	Hendrick, Earl George, Jr.	Ill.
A.B. 1952, Radcliffe College		Hendrix, Martha Sue	
Heisetz, Seymour Norton	D.C.	Hendrix, Paul Max	
A.B. 1952, Harvard College		A.B. 1950, The George Washington University	D.C.
Heitler, Melvin Harold	Va.	Hendry, Sara Ellen	D.C.
B.S. 1949, William and Mary College		Henebry, Alfred Garrett	
M.S. 1951, The George Washington University		A.B. 1949, A.M. 1950, The George Washington University	D.C.
Heilmann, Janet Caroline	Md.	Henegar, Harold Hubert	
A.B. 1952, Mary Washington College		B.S. 1936, Southwest Missouri State College	D.C.
Hein, Dorothy Ann	Conn.	A.M. 1940, University of Missouri	Va.
Hein, John H.	D.C.	Heneghan, William Joseph	
Ph.B. 1941, Kenyon College		Heney, Thomas Joseph	Va.
Heinemann, Gisela Elizabeth	Germany	A.B. 1951, The George Washington University	
Hennen, Julietta	D.C.	Heneveld, Lloyd Allen	Md.
Hentz, Robert Alfred	Md.	B.S. in E.E. 1950, University of Michigan	
Heinzerling, Marjorie Lillian	D.C.	Henley, Robert Creecy	Ohio
B.S. 1945, Southeastern State College	Va.	B.S. in Ed. 1936, Ed.M. 1946, University of Maryland	
Heishman, Jennie Rose, Jr.	D.C.	Henn, Carl Leroy, Jr.	
Heissell, Catherine Davis	Germany	B.S. 1945, Northwestern University	D.C.
Heisterkamp, Gertrud Annamaria	D.C.	M.B.A. 1947, Harvard University	D.C.
Heltroch, Kenneth Edward	Md.	Hennegen, Lloyd George	D.C.
Heller, John Michael	Md.	Hennigan, Helen Mary	Finland
Heller, Milton		Hennigan, Mary Louise	W.Va.
B.S. 1950, The George Washington University		Henrikson, Ulla Margareta	D.C.
Heller, Norman Harold	Md.	Henry, James Faulkner	Maine
A.B. 1950, L.L.B. 1952, The George Washington University		Henry, Jo Ann	
Hellerman, Eli	D.C.	Henry, Merton Goodell	D.C.
Hellman, Carl S.	Md.	A.B. 1950, Bowdoin College	Md.
Hellmuth, Everett Albert	Va.	Henschel, Carol Joan	
Hellmuth, James Grant	Va.	Henshaw, Barbara Hanby	Va.
B.S. 1948, Yale University		A.B. 1948, A.M. 1952, The George Washington University	D.C.
Hellmuth, Raymond Louis	Va.	Henshaw, Beatrice May	Va.
B.S. 1951, Mount St. Mary's College		Henshaw, Ida Jean	D.C.
Hellstrom, Ralph Edwin	Ill.	Henshaw, Robert Harvey	
A.B. 1945, Augustana College and Seminary		Henson, Edwin Nott, Jr.	Md.
Helm, Otto William	D.C.	LL.B. 1948, The George Washington University	
B.S. 1952, Virginia Polytechnic Institute		Henson, Edwin Ray, Jr.	D.C.
Helmer, Cyrus Robert	Md.	B.S. 1949, Colorado Agricultural and Mechanical College	
Helminiewicz, Richard Gerard	N.Y.	Henson, Lusitania Theresa	D.C.
Helsel, Frank Alvin	D.C.	B.S. 1950, Wilson Teachers College	D.C.
Helton, Henry Stephen	Ind.	Heon, Agnes George	
A.B. 1937, Wabash College		Hepner, Ethel Ellen	
Helton, Lorraine Marie	D.C.		
A.B. 1935, Marshall College			
Heltaley, Myra Lee	Ga.		
A.B. 1942, University of Kentucky			

Herbert, Anna Marie A.B. 1950, Smith College	Mo.	Heyward, Francis Dewey A.B. 1938, University of North Carolina LL.B. 1951, The George Washington University	N.C.
Herbert, Edward Leslie	Md.		
Herbert, William Paul	D.C.		
Herik, Mary	Pa.	Heywood, Robert Monroe	Wis.
Herbst, Robert Van Cortlandt	D.C.	B.S. 1950, University of Wisconsin	
Herde, Marjorie Alice	D.C.	Hiatt, Howard Herschel	Va.
Herdman, Regina Maxine	W.Va.	Hibner, Rodney Charles	Pa.
Herd, Jean Robert B.S. 1950, Johns Hopkins University	D.C.	B.S. 1950, Springfield College	
Herenrather, Charles Neale A.B. 1948, The George Washington University	Va.	Hickerson, Maurice Meeks	La.
Herkert, Robert Francis	Pa.	Hickey, Laurence Byrne	D.C.
Hert, Doris Lorraine	D.C.	Hicks, Coy Thomas	Va.
Herman, Elton	D.C.	A.B. 1951, Juniata College	Miss.
Herman, John Rufus	D.C.	Hicks, Herbert Hollis	
Herman, Monte Arnold	D.C.	A.B. 1950, Harvard University	
Herman, Sally Ann A.B. 1952, Hood College	N.Y.	Hicks, Horace Edward	D.C.
Herdon, Frances Virginia A.B. 1942, College of William and Mary	Va.	Hicks, Robert Waverly	Conn.
Herdon, Mary Rhodes	Md.	Hickson, Lula Jane	D.C.
Herdon, Richard Middleton A.B. 1941, Washington and Lee University	Pa.	Hiebert, Laura Franz A.B. 1947, Bethel College	D.C.
Hero, Alfred Olivier B.S. 1945, U.S. Military Academy A.M. 1950, Vanderbilt University	D.C.	Hiebert, Tal Gordon A.B. 1950, Kansas University	
Herr, Richard Allen B.S. 1951, Washington University	Mo.	Hield, Wayne W. A.M. 1950, University of California	Va.
Herrins, Lee Rutledge	D.C.	Hiemenz, Herbert John B.S. 1929, U.S. Naval Academy M.S. 1934, Massachusetts Institute of Technology	Fla.
Herrmann, Vilam	D.C.	Hiemenz, James Glenn	Va.
Herrold, Mary	D.C.	Hierholzer, Alexander Drew, Jr. A.B. 1950, Roanoke College	Va.
Herron, Mary Ellen	D.C.	Hirbie, Robert Eugene	D.C.
Hersch, Harold Harley A.B. 1951, Bridgewater College	Pa.	Higby, Philip Dee	Va.
Hershfield, David Michael A.B. 1948, University of California at Los Angeles	Va.	Hudson, Mary Ellen	D.C.
Hertzberg, John Shearer A.B. 1948, Hobart College	D.C.	Hussins, John Read	Va.
Herzog, Chauncey, Jr.	Va.	Huggins, Thomas Patrick	Ohio
Herzog, Lorna Sybil	D.C.	Huggins, Charles Oakley	Va.
Hesseltine, Charles Edwin	Va.	Higgs, George Donald	Md.
Heslop, Jeff David A.B. 1950, Louisiana State University	Miss.	High, Carl Arthur A.B. 1951, Dickinson College	Pa.
Hess, Charlotte Rebecca B.S. 1945, Temple University A.B. 1950, A.M. 1951, The George Washington University	D.C.	High, Joe Benton	Fla.
Hess, Frank Gadd	D.C.	Higginbotham, Horace Eugene	D.C.
Hess, Hazel Louise	Ala.	Hilgar, Arthur Gilbert A.B. 1950, Eastern Nazarene College	Pa.
Hess, Lawrence Eugene, Jr. B.S. 1946, U.S. Naval Academy	Pa.	Hilkert, Fred George A.B. 1951, Syracuse University	N.Y.
Hess, Edward William B.S. 1937, U.S. Naval Academy	Ohio	Hill, Albert Daniel	Va.
Hesselund, Jensen Juliette A.B. 1951, University of Maryland	Denmark	Hill, Arlow Fielding A.B. 1941, The George Washington University	Colo.
Hessler, Brian Joseph B.S. 1953, U.S. Military Academy	Md.	Hill, Betty Jean	Va.
Heberington, Travis Monroe Ph.D. 1937, Columbia University	Texas	Hill, Betty Rushing	Va.
Hewitt, Clifford Adelbert Ph.D. 1937, Columbia University	D.C.	Hill, Dorothy Jean	D.C.
Hewitt, John Walsh	Va.	Hill, Elizabeth Daniell	W.Va.
Hewitt, Lowell Howard	D.C.	Hill, Elizabeth Lois A.B. 1947, Wayne University	Va.
Heyert, Martin A.B. 1940, Hunter College	Calif.	Hill, Harold Clinton	D.C.
Heyman, Betty Ruth	N.Y.	Hill, James Douglas B.S. 1948, Ohio State University	D.C.
	Ill.	Hill, James Merwyn	Va.
		Hill, Jane Kinsman	Md.
		Hill, Oliver Strange	Md.
		Hill, Samuel Claude, Jr. B.S. 1952, West Virginia University	W.Va.
		Hill, Suzanne Dourne	Va.
		Hill, Thelma Pauline	Ind.
		Hill, Willard Clinton	Ark.
		Hill, Willard Ralph A.B. 1950, Johns Hopkins University A.M. 1954, Syracuse University	Fla.
		Hillebrand, Herbert Walter A.B. 1943, Elmhurst College B.D. 1945, Eden Theological Seminary	D.C.

Hiller, William Eugene B.S. 1949, Tulane University	D.C.	Hobbs, Herman Hedberg Hobbs, Marie Louise	Va. Va.
Hillery, Edward Alton	D.C.	B.S. 1944, Radford College	Md.
Hilliard, Glenn Schwartz	Md.	Hobbs, Robert Mack	D.C.
Hilliker, Grant Gilbert	Va.	Hobday, Vincent Nelson	Pa.
A.B. 1942, University of Wisconsin		Hoburg, Lorraine Margaret	Wyo.
Hillman, Clay Williams	D.C.	A.B. 1952, Westminster College	
Hillman, Franklin Powell	Va.	Hoch, Marvin Michael	Md.
A.B. 1936, Emory and Henry College		A.B. 1951, University of Wyoming	Va.
A.M. 1940, The George Washington University		Hocking, William Mayhew	
Hillmon, Tommie J.	Kans.	Hodge, David MacMahan	Neb.
A.B. 1949, Washburn University of Topeka		Hodge, Dorothy Ann	
A.M. 1951, Syracuse University		B.S. 1940, Georgetown University	Tenn.
Hilmar, Harold Oscar	N.Y.	A.B. 1952, The George Washington University	D.C.
B.S. 1940, Webb Institute of Naval Architecture		Hodges, Betty Florence	Md.
M.S. 1948, Massachusetts Institute of Technology		Hodges, Janet Susan	
Hilsenrath, Joseph	D.C.	Hodges, Shirley Rice	Cuba
Hiltabiddle, Stephen Bartholf	Md.	A.B. 1952, The George Washington University	
A.B. 1951, Lafayette College		Hoed, Maria Teresa	
Hilton, Andrew Carson	Miss.	Ed D. 1946, Ph.D. 1941, University of Habana	Me.
A.B. 1952, University of Maryland		Hoehler, Pauline Eleanor	D.C.
Hindman, Ruth Naomi	Va.	Hoff, Hubert Jack	Md.
Hinds, Claude Joseph	Wash.	Hoff, Mary Elizabeth	
Hinds, Martha Leilani	Va.	B.S. 1927, Arnold College	D.C.
Hine, Frank Brown	D.C.	A.M. 1940, Temple University	Iowa
Hine, William Billy	Ill.	Hoffeld, Donald Raymond	Wyo.
Hiner, Richard L.	Iowa	Hoffman, Arthur Daniel	Md.
B.S. 1929, Iowa State College		Hoffman, Benita Jean	Ohio
A.M. 1944, The George Washington University		Hoffman, Clarice Clark	Md.
Ph.D. 1952, University of Massachusetts		Hoffman, Dorel Dean	Va.
Hirani, Gope Dhimchand	D.C.	Hoffman, Paul	
Hirani, Barbara Louise	Md.	Hoffman, Renee	D.C.
Hirsh, Fanchon Thora	D.C.	A.B. 1949, Queens College	Va.
Hirsh, John Honeycutt, Jr.	D.C.	Hoffman, Richard Manning	Iowa
Hirshaw, Jesse Oscar, Jr.	Va.	Hoffman, William Alexander III	W.Va.
Hirshelwood, George Dawson	D.C.	Hoffmann, Helga	
Hintze, Arthur Harris	D.C.	Hoffmaster, Edmund Schley, Jr.	S.D.
L.L.B. 1942, National University		A.B. 1951, Shepherd College	Md.
Hintze, Bernard Carl	D.C.	Holtzner, Gaylord Jerome	
Hintze, William	Va.	Hogan, Douglas Leroy	
B.E.E. 1949, The George Washington University	Md.	B.S. 1950, The George Washington University	Va.
Hippe, George Orville, Jr.	W.Va.	Hogan, Florence Pearl	Ill.
A.B. 1952, Grove City College		Hogan, James Edward	Md.
Hironaka, Henry	D.C.	Hogan, Jeanne Wygant	
Hirschfeld, Kenneth	N.Y.	A.B. 1943, University of North Carolina	D.C.
Hise, James Clotis	Ill.	Hogan, Joan Marie	Ill.
A.B. 1948, University of Illinois		Hogan, Walter Thomas, Jr.	Va.
L.L.B. 1951, The George Washington University		Hoge, Benjamin Whiting	Md.
Hise, William Curtis	Ill.	A.B. 1951, University of Virginia	
A.B. 1948, A.M. 1949, University of Illinois		Hogewind, Cornelia Johanna	D.C.
Hishmeh, John Jacob	D.C.	A.B. 1947, Smith College	
B.S. 1952, Georgetown University		Hohenshilt, Margaret White	Pa.
Hitchcock, Barbara Singley	Md.	B.S. 1937, Mary Washington College	Wyo.
A.B. 1943, Barnard College		Holhan, James Joseph	
Hix, Ernest Theodore	Va.	Holben, Donald Eugene	D.C.
B.M.E. 1940, L.L.B. 1952, The George Washington University		B.S. 1946, U. S. Naval Academy	Md.
Hla, Maung Maung	Burma	Holbrook, Arthur Walter	Ariz.
A.B. 1940, University of Rangoon		Holbrook, Henry Scofield	
Hubb, Julius George	Md.	Holcomb, Cynthia Gould	Calif.
A.B. 1930, Gettysburg College		A.B. 1951, Stanford University	Va.
Ed M. 1940, Johns Hopkins University		Holcombe, John Tyler	
Hlusko, William, Jr.	N.J.	Holcombe, William Collis	Pa.
Ho, Louis T.	China	A.B. 1946, The George Washington University	Va.
Hobbs, Edward Victor	Md.	Holder, Richard Joseph	N.Y.
		Holderness, Robert B.	
		Holdowsky, Simon	
		A.B. 1939, Brooklyn College	

Holdsambeck, Sam	Ala.	Holup, John Frank	Pa.
Holford, Donald Lloyd	Va.	Holup, Joseph John	Pa.
A.B. 1946, University of Virginia		Holwick, Edmond Charles	D.C.
Holford, Mildred Anne	Va.	Homer, Mary Elizabeth	Ohio
Holladay, Edgar Dinwiddie	Va.	B.S. in Ed. 1950, Kent State University	
A.B. 1948, University of Virginia		A.M. in Ed. 1952, The George Washington University	
Holland, Brendan Pearse	D.C.	Honabach, Elmer Wilson	Va.
B.S. 1952, Georgetown University		Hone, Robert E.	Maine
Holland, Charles Douglas	Canada	A.B. 1935, LL.B. 1938, Columbia University	
Holland, Harrison Melsher	Va.	Honeywell, Donald Melvin	Md.
A.B. 1944, University of Washington		Honick, Joseph Joel	D.C.
A.M. 1949, Columbia University	D.C.	Hood, Frank Watkins	D.C.
Holland, Martha Jo	Va.	Hood, James Coy	Wis.
Holten, Robert A.	Va.	B.S. in M.E. 1951, University of Wisconsin	
Holtenberg, Richard Alvin	Va.	Hood, Robert George Henry	D.C.
Holler, Norbert Philip	N.Y.	Hoop, James Maxwell	Mass.
B.S. 1950, College of the City of New York		B.S. 1952, Mississippi State College	
Holley, John Calvert, Jr.	Fla.	Hooper, Melvin Dale	D.C.
A.B. 1952, Vanderbilt University		Hooper, Walter Malcom	N.Y.
Holliman, William Jelks, Jr.	Va.	Hooven, Norman Winfield	Md.
Hollingsworth, Farrell	Idaho	B.S. 1940, Pennsylvania State University	
B.S. 1949, Utah State Agricultural College		Hoover, Charles Rudolph	Va.
Hollingsworth, James Boettler	Calif.	B.E.E. 1941, The George Washington University	
Hollingsworth, John Allen	Va.	Hoover, Earl Dudson	Md.
A.B. 1951, University of Virginia		Hoover, Richard Charles	Pa.
Holles, Thelma Elizabeth	Pa.	Hoover, Wallace Archer	Md.
Hollon, Thomas Harry	Md.	Hopkins, Elbert Erskine	D.C.
A.B. 1949, The George Washington University		B.S. 1946, Alabama Polytechnic Institute	
A.M. 1952, Catholic University of America		M.S. 1950, University of Alabama	
Holloway, Ernest Walker	N.Y.	Hopkins, Nancy	Md.
B.S. 1943, U. S. Naval Academy		Hopkins, Ralph	Md.
Holloway, James Donald II	Md.	B.S. 1931, M.S. 1932, Tulane University	
Holly, Barbara Sue	D.C.	Hopp, Philip Joseph	R.I.
Holman, Herbert Harlan	Fla.	B.S. 1952, University of Rhode Island	
B.S. 1952, University of Florida		Hopper, Henry Pearson	D.C.
Holman, Mary Alida	Md.	B.S. in Ed. 1933, M.S. in Ed. 1934, University of Pennsylvania	
Holmes, Julius Mitchell	Md.	Hopper, Richard Ned	Va.
B.S. in C.E. 1930, C.E. 1940, University of Pennsylvania		A.B. 1950, Bridgewater College	
Holmes, Anita May	D.C.	Hopping, Andrew Bininger	Va.
Holmes, John Steven	D.C.	Hopmann, Kurt Heinz	Va.
B.S. 1952, Arizona State College		Hopson, Maurice Henry	
Holmes, Paul Roger	N.Y.	A.B. 1930, Hobart College	
B.M.E. 1950, Rensselaer Polytechnic Institute		Hopwood, Alys Iov	D.C.
Holms, Ralph Albion, Jr.	Va.	Horan, James Michael	N.Y.
B.S. 1947, University of Maryland		B.S. 1936, Fordham University	
LL.B. 1950, University of Virginia		Horan, Mary Claire	Pa.
Holmeren, Carol Mae	D.C.	Horiuchi, Harold Shigeo	Md.
Holsher, Melvin Charles	Va.	Horlett, Barbara Ann	D.C.
A.B. 1949, The George Washington University		Horn, Conrad Seneca Van	D.C.
Holshenko, Samuel	Pa.	Horn, Herbert Oyden	D.C.
Holst, Richard Garrett	Fla.	Horn, Joan Banuelin	D.C.
A.B. 1951, University of Virginia		Horn, Rufus Austin, Jr.	D.C.
Holt, Clara Leon	Va.	Horn, Will Henry	Va.
Holt, Elmer Dean	Okla.	Horne, Philip Scott	Va.
Holt, James Howard	D.C.	Horneck, George B.	
Holt, Martha Lucretia	Va.	A.B. 1940, Lehigh University	
A.B. 1951, Bennington College	Maine	Horning, Marion Anne	Md.
Holt, Nadine Richmond		Hornaby, William Paul	Ala.
B.S. 1949, University of Maryland	Va.	Hornstein, Louis Bruce	Md.
Holtz, Catherine	Oreg.	Honowitz, Alan Burton	N.Y.
A.B. 1945, University of Wisconsin		Horowitz, Bruce Gordon	Calif.
Holtzner, John Edward, Jr.	Pa.	A.B. 1950, Harvard University	
B.S. 1950, Pennsylvania State College		Hornowitz, Emanuel	D.C.
Holtzman, Marilyn	D.C.	B.S. 1948, College of the City of New York	
Holtzman, Herbert Miley, Jr.	Va.		

Horowitz, Milton Arthur	Md.	Howder, Murray Louis	D.C.
Horsburgh, Sarah Jane	Md.	Howe, Denis Herbert George	Md.
Horsky, Eugene Gregory	N.Y.	Howe, Richard Bryner	Pt.
B.S. 1948, B.C.E. 1949, Rensselaer Polytechnic Institute		Howell, Frances Dodd	D.C.
Horsley, Carol Jean	Oreg.	A.B. 1951, The George Washington University	Md.
Horstman, Francis Fielding	Md.	Howell, Mary Joseph	D.C.
Horstman, John Francis	Va.	Howell, Patricia Ann	Va.
Hortin, Pauline Brooks	Ill.	Howell, Posey Blanchard	Md.
A.B. 1931, McKendree College		Howells, Helen Ann	Calif.
Horton, John Brock	N.C.	Howerton, Wilfred Monroe	
Horton, Richard Edward	Md.	A.B. 1941, Montana State University	Md.
Horvath, Elek	D.C.	Howze, Elizabeth McNichol	
Graduate 1948, the University of Budapest		B.S. 1941, Pennsylvania State Teachers College, West Chester	
Hothersall, Eugenia Lockhart	D.C.	A.M. in Ed. 1951, The George Washington University	Mass.
Hotvedt, Donald Ashton	Wis.	Howze, Elizabeth McNichol	D.C.
Hough, Grace Blandford	D.C.	Hoyle, John Everett	
Hough, Henry Logan	Va.	Hoyme, Lucile Eleanor	
B.S. in C.E. 1939, Tri-State College		B.S. 1950, The George Washington University	Md.
Hough, Robert Clifton	Md.	Hoyt, John Paul	
Houghton, Helen	Va.	B.S. 1938, Middlebury College	
A.B. 1949, Mary Baldwin College		A.M. 1955, Columbia University	Va.
Houghton, Ray Brett	Va.	Hoyt, John Stanley, Jr.	N.Y.
B.S. 1949, Newberry College		B.S. in M.E. 1948, Syracuse University	
Houghton, Richard Ayer	N.H.	Hoyt, William George	
B.S. 1947, Harvard University		A.B. 1951, The George Washington University	Pt.
M.B.A. 1948, University of Michigan		Hrebik, Catherine	D.C.
Houghton, Thomas Francis	D.C.	Hryn, Della	D.C.
Houk, Vernon Neal	Calif.	Huang, Dick Meng Cho	China
Houp, Geraldine Araminda	Pa.	Huang, Shing-Yi	
Hourihan, Mary Ellen	N.H.	A.B. 1947, Central Institute of Political Science, Nanking	
A.B. 1916, Smith College		A.M. in Govt. 1949, The George Washington University	Va.
House, Arthur Lee, Jr.	D.C.	Hubbard, Charles Harold	Mich.
House, Clifford Ray	W.Va.	Hubbard, John Edward	
A.B. 1910, West Virginia Wesleyan College		B.S. 1949, L.L.B. 1952, University of Michigan	Md.
Ed.M. 1940, University of Cincinnati		Hubbard, Marye Decker	D.C.
House, Lawrence S.	Md.	A.B. 1940, University of Minnesota	D.C.
House, Margaret Irene	Va.	Hubbard, Ruth Dennis	D.C.
Housen, Bebe A.	Ala.	Hubbard, Wade Francis	Ill.
Houston, Malcolm Woods	N.H.	Hubbell, Wolcott Wood, Jr.	Md.
Houston, Robert Joseph	Md.	Huber, Doyle William	
Howar, Edmond	D.C.	Huber, Godfrey Stephen	
Howard, Charles Raymond II	Ill.	B.S. 1949, Oklahoma Agricultural and Mechanical College	N.Y.
A.B. in Govt. 1952, The George Washington University		Huber, Joseph Richard	
Howard, Fred Steven	Md.	B.S. 1950, Georgetown University	D.C.
Howard, Henrietta Rothwell	D.C.	Huddelson, Charles Valentine, Jr.	Md.
B.E. 1917, Milwaukee State Teachers College		Huddle, William David	W.Va.
A.M. in Ed. 1950, The George Washington University		A.B. 1952, Western Maryland College	D.C.
Howard, Hugh Wyman	Va.	Huddleston, Carole Ruth	Md.
A.B. 1917, U. S. Naval Academy		Hudson, Richard Scott	
M.S. in C.E. 1945, Cornell University		Hudgins, Walter Richardson	
Howard, Jay William	D.C.	A.B. 1939, A.M. 1939, University of Richmond	Va.
Howard, John William	D.C.	Hudson, Herschel C.	
B.S. 1948, Catholic University of America		B.S. 1949, A.M. 1951, University of South Carolina	W.Va.
M.S. 1950, The George Washington University		Hudson, James Matthew	
Howard, Marjorie Lucille	Md.	A.B. 1950, The George Washington University	Md.
A.B. 1941, Clarke College, Iowa		Hudson, John Frederick	
Howard, Mona Genevieve	D.C.	A.B. 1951, The George Washington University	Md.
A.B. 1952, Trinity College		Hudson, Ralph Hoskins	D.C.
Howard, Percy John	Ala.	Hudson, William Lorraine	D.C.
B.S. 1940, University of Alabama		Huff, Joyce Evelyn	Md.
Howard, Robert Eugene	Va.	Huff, Norman William	
A.B. 1950, Findley College		Huffard, William Louis	
A.M. 1941, Ohio State University			
Howard, William McNew	Md.		
Howard, William Reed	Va.		

Huffman, Richard Myall	Md.	Hunt, Elta Nadine	D.C.
A.B. 1951, Haverford College		Hunt, Garnett I.	D.C.
Huffy, John Archbold	Fla.	Hunt, James Galloway	Va.
Huggins, James Andrew	D.C.	Hunt, John Chelsea	Conn.
B.S. 1948, Georgia Technological Institute		Hunt, Lucian Jackson, Jr.	Va.
Hughes, Barbara Marie	D.C.	B.S. 1940, U. S. Naval Academy	
Hughes, Edmund Crump	D.C.	M.S. 1947, Massachusetts Institute of Technology	
Hughes, Edward James	Pa.	Hunt, Richard Coulter Drum	Fla.
Hughes, Fabian Sebastian	D.C.	B.S. 1910, U. S. Naval Academy	
A.B. 1940, St. Mary's University		A.M. 1950, University of Pennsylvania	D.C.
Hughes, Harry Robinson	Md.	Hunt, Russell William	D.C.
Hughes, Henry Franklin	Md.	Hunter, Anne	
Hughes, James Henry	Md.	A.B. 1950, University of California	D.C.
A.B. 1940, New York University		Hunter, Isaac Roy	D.C.
Hughes, John Temple	Va.	Huntton, Barbara Ann	Calif.
B.E.E. 1952, The George Washington University		Huntwork, Bruce Leslie	Minn.
Hughes, Patricia Ann	Md.	Hurd, Marjorie Kathryn	Va.
Hughes, Richard Humphrey	D.C.	Hurd, Muriel Richards	D.C.
Hughes, Robert Bruce	Va.	Hurlburt, Ward Bullard	Md.
A.B. 1948, University of Cincinnati		Hurley, Charles Warren	Va.
Hughes, Robert Joseph	Va.	Hurley, Elsie M.	
Hughes, Stephen Dwight	Maine	B.S. in Ed. 1910, College of the City of New York	
B.B.A. 1951, Southern Methodist University		Hurley, John James	D.C.
Hughes, Thomas Emory	D.C.	A.B. 1948, The George Washington University	
A.B. 1946, St. Marys Seminary and University, Maryland		Hurley, Mary Anne	D.C.
Hughes, Thomas Herbert	S.C.	A.B. 1948, Geneva College	Va.
Hughes, William Francis	Md.	Hurley, Thomas Jefferson	D.C.
Hughes, Jerry Keefe	Va.	Hurley, Virginia Clampton	
Hughes, Robert Lewis	Va.	A.B. 1930, Baylor College	
Hu, Peter Shui-Pui	D.C.	Ed.M. 1935, University of Texas	
Hu, Wen Yam	China	Hurst, Susan	Fla.
A.B. 1950, The George Washington University		Hurst, Thomas Orlando	Mo.
Hubbart, Janet Ruth	D.C.	Hutt, James Mitchell	Md.
Hubbart, Harrison Virginia	Va.	A.B. 1919, Western Kentucky State Teachers College	
Hubbart, Jane Pennington	Va.	Hurwitz, Edward	N.Y.
Hubbart, Joan Spofford	Va.	A.B. 1912, Cornell University	
Hubbart, Hazel Marjorie	Kans.	Hury, Pauline Martha	Conn.
Hull, Grace Loring	N.Y.	A.B. 1948, Hillier College	
Hull, Maury Isaac	Va.	Huschke, Hedwig Elaine	Va.
A.B. 1932, Southwestern College		Huse, Joan Rockwell	Md.
A.M. 1946, LL.B. 1952, The George Washington University		A.B. 1900, Smith College	
Hull, Sarah Ellen	D.C.	Husser, Andrew	Va.
A.B. 1952, The George Washington University		Huxson, Edward Eugene	D.C.
Hull, Warren Robertson	N.Y.	Huxted, Caroline Duer	D.C.
Hulley, Althea Isabelle	D.C.	Huxton, Robert Cameron	Wash.
Hulley, James Pierce	Pa.	Hutchinson, Alan Stanton	
B.S. 1924, U. S. Marine Academy		B.S. 1948, St. Martin's College	
A.M. 1951, The George Washington University		LL.B. 1951, The George Washington University	D.C.
Hulley, Judson Dowling	D.C.	Hutchinson, George Edward	
B.E.E. 1951, The George Washington University		A.B. 1951, The George Washington University	D.C.
Hume, Doris Sabine	Va.	Hutchinson, George Leroy	Va.
B.S. 1932, Simmons College		Hutchinson, Joseph Raymond, Jr.	D.C.
Humorenok, Joseph Thomas	Calif.	Hutchinson, Nina	D.C.
A.B. 1940, University of California		Hutchinson, Virginia Paulette	Texas
Humphrey, Joan Lois	D.C.	Hutchinson, Ava Lee	Calif.
Humphreys, Frank Ray	N.Y.	Hutmire, Edward William	
Humphreys, Robert Charles	D.C.	B.S. 1951, The George Washington University	Md.
Hung, Ching Chong	D.C.	Hutmire, Shalee Rhodes	La.
A.B. 1927, San Diego State College		Hutton, Harrison Daxden	
Hunter, Jane Frances	D.C.	A.B. 1948, Southeastern Louisiana College	
Hunt, Charles Edmund	D.C.	J.D. 1951, The George Washington University	
B.S. in B.A. 1951, Georgetown University		Hutt, Stanley David	D.C.
		Hutton, Wallace Eugene	Md.
		A.B. 1950, Indiana University	

Huxford, Richard Wakefield	Ind.	Iovino, Charles Anthony, Jr.	D.C.
Huyer, Anne	Fla.	A.B. 1952, The George Washington University	D.C.
Hyde, George Richard	Idaho	Ireland, Oscar Dale	Mass.
B.S. 1952, Brigham Young University		Irons, Francis Joseph	Vt.
Hyde, James Richard	Va.	A.B. 1951, Boston College	Pa.
B.S. 1952, Georgetown University		Irons, Howard Smith	N.C.
Hyde, John Michael	Del.	A.B. 1950, Dartmouth College	Ohio
Hyland, Matthew Phillip	D.C.	Irons, Joan Marie	Calif.
Hyman, Joseph	N.Y.	Irvin, Emory Wayne	N.Y.
D.D.S. 1946, Iowa State College of Agriculture and Mechanic Arts		Irvin, John Francis	Md.
A.B., D.D.S. 1947, New York University		Irvin, Margaret Catherine	W.Va.
Hymowitz, Shirley L.	D.C.	Irvine, Eleanor Hood	Md.
Hynes, Paul Allen	N.Y.	A.B. 1937, Cornell University	W.Va.
Hynes, Robert Edward	Md.	Irvine, Harry Winfree, Jr.	Md.
Hyssell, Lloyd Lamar	Md.	Irwin, Grattan George, Jr.	
		A.B. 1947, West Virginia University	
I		Irwin, Harry Elmer	
Isia, Arthur G., Jr.	N.Y.	B.S. in Eng. 1950, The George Washington University	D.C.
B.S. 1950, Niagara University		Isaacs, Oakley Gorman	D.C.
Iandolo, Angelo John	N.Y.	Isaminger, Melvin James	Va.
B.S. in P.E. 1951, The George Washington University		Isabell, Francis Russell	
Ice, Inez Lorraine	N.Y.	Iselin, Charles Oliver III	D.C.
B.S. 1949, University of Rochester		A.B. 1951, Harvard University	D.C.
Ice, John Frederick	D.C.	Iselt, Lawrence Louis	
Icenhower, David Edward	D.C.	Ish, George Drexel	D.C.
Idoine, Leon Sumner	Md.	B.S. 1951, Michigan State College	D.C.
B.S. 1940, University of Toledo		Isler, Eileen Sophia Claire	Pa.
M.P.H. 1947, University of Michigan		Isley, Dale Elmer	Md.
Iffland, Paul Warren	Texas	Israel, Felice Alice	
A.B. 1949, Texas Christian University		Israel, Thomas Sewell	Md.
A.M. 1952, University of Texas		A.B. in Govt. 1952, the George Washington University	N.Y.
Iglehart, John Joseph	Md.	Itynre, Edwin Recher	
Ihara, Ruth Okuyo	D.C.	Itzkoff, Seymour William	S.D.
Ileri, Ali Refik	D.C.	A.B. 1950, Hillyer College	Hawaii
L.L.B. 1942, University of Istanbul, Turkey		Iverson, Donald Bernard	
Imbert, Rosemary	Mont.	Iwamoto, David	
A.B. 1944, Montana State University		A.B. 1947, Walla Walla College	
Imirie, George Wady	Md.	A.M. in Ed. 1952, The George Washington University	England
B.S. 1952, American University		Izatt, Rose Mary	
Imrie, Walter Curtis	Va.		
B.S. 1946, University of Rhode Island		Jablon, Thelma Berger	Va.
A.M. 1949, American University		A.B. 1958, Hunter College	Va.
Indorf, Frederick Anderson	Mo.	Jablonski, Stanley	S.D.
B.S. in Ed. 1938, University of Missouri		Jackson, Alkernon Wilmer	D.C.
Missouri		Jackson, Alice Marie	
A.M. in Ed. 1949, The George Washington University		Jackson, Andrew	Va.
Infosino, Carmelo John	N.Y.	A.B. in Govt. 1943, The George Washington University	
A.B. in Govt. 1951, The George Washington University		Jackson, Anzville, Jr.	Va.
Ing, Anna May	Md.	B.S. in M.E. 1950, Virginia Polytechnic Institute	Md.
B.S. 1940, The George Washington University		Jackson, Catherine	D.C.
Ing, Robert Bowen	Md.	Jackson, Daniel Grove	D.C.
A.B. 1943, Duke University		A.B. 1951, University of Maryland	
Ingalls, Huntley Hampton	Md.	Jackson, F. Hilton	N.C.
Ingerod, Birgitta Stina	D.C.	Jackson, Edwin Wilford	Tenn.
Ingles, Ruth Curley	Va.	A.B. 1952, Occidental College	
Inglis, Anthony	N.Y.	Jackson, Fern Goode	
Ingram, Augusta	D.C.	A.B. 1945, Berea College, Ky.	
Ingram, James Oliver	Okla.	Jackson, Frances Beatrice	
Ingram, Ralph Lindsey, Jr.	D.C.	B.S. 1951, East Tennessee State College	
Inouye, Daniel Ken	Hawaii	A.M. in Ed. 1950, The George Washington University	Md.
A.B. 1950, University of Hawaii		Jackson, Frank Holbrook	Md.
Inscope, June Virginia	D.C.	B.S. 1938, University of Maryland	
Iventash, Hyla Ruth	Conn.	Jackson, Gerald Thomas	
Ionno, Joseph Anthony	Conn.	B.S. 1951, University of Scranton	
A.B. 1951, The George Washington University			

Jackson, Harold Leo	Calif.	James, Festus Burrell	Va.
B.S. 1952, California Institute of Technology		James, Howard Victor	Md.
Jackson, Harvey Taylor	Md.	Jameson, John Franklin	D.C.
B.S. 1952, University of Maryland		Jameson, Richard Hagkleton	Md.
Jackson, Joseph Brown, Jr.	Va.	A.B. 1947, St. John's College	Mass.
A.B. 1949, Texas Technological College		Jamroschian, Hagop Herach	
A.M. in Govt. 1948, The George Washington University		A.B. 1949, Clark University	D.C.
Jackson, Martha Jo	D.C.	Jamison, Jane Allen	D.C.
Jackson, Mary Patricia	Fla.	Jarrett, George John	Md.
Jackson, Robert McClelland	Va.	Jans, Fred Carl, Jr.	
Jackson, Thomas Avery	Va.	B.S. 1951, University of Maryland	Va.
B.S. 1951, Mississippi State Teachers College		Jarava, Cecelia Katherine	D.C.
Jackson, Virginia Thornton	Texas	Jarboe, Teresa Mae	R.I.
Jacob, Fred	N.Y.	Jarcho, Harold George	
B.F.E. 1948, College of the City of New York		B.S. in E.E. 1949, Rhode Island State College	India
Jacob, John Brevard	Va.	Jariwala, Praveen Kantilal	
Jacob, Phyllis Eileen	D.C.	B.S. 1946, University of Bombay	Va.
A.B. 1952, The George Washington University		Jarman, Naomi Craia	
Jacob, Wayne Thompson	N.Y.	A.B. 1951, A.M. 1955, The George Washington University	D.C.
A.B. 1949, The George Washington University		Jarrett, Joyce Dodson	
A.M. 1952, University of Minnesota		A.B. 1950, Carson-Newman College	D.C.
Jacobs, Edward Franklin	N.J.	Jarvis, Arthur Bradley	D.C.
B.S. 1949, Rutgers University		Jarvis, Margarita Fletcher	N.C.
Jacobs, George Joseph	Md.	Jarvis, Warren Beamon	D.C.
A.B. 1949, University of Mississippi		Jashke, Lavern Armin	
M.S. 1947, West Virginia University		B.S. in C.E. 1950, University of Texas	Conn.
Jacobs, John Jacob, Jr.	Va.	Jaskiewicz, Edmund Michael	
B.S. 1943, Pennsylvania State Teachers College, Kutztown		B.S.E. 1947, University of Connecticut	Conn.
M.S. 1947, University of Pennsylvania		Jaskiewicz, Leonard Albert	
Jacobi, Joseph Harry	D.C.	A.B. 1949, University of Connecticut	D.C.
Jacobsen, Lawrence Lavender	Va.	Jaskot, John Joseph	
Jacobsen, Bernice Harriet	Wis.	L.I.B. 1951, The George Washington University	D.C.
B.E. 1937, Wisconsin State Teachers College, River Falls		Jaszenkd, Karl	D.C.
Jacobson, Bebe Audrey	D.C.	LL.B. 1955, University of Belgrade	D.C.
Jacobson, Charles Fowler	Md.	Javier, Eugene Pedro	D.C.
Jacobson, Elizabeth	Nebr.	Jeffers, Helen Rae	D.C.
Jacobson, Harold	D.C.	B.S. 1934, West Virginia University	Calif.
B.S. 1950, College of the City of New York		Jefferson, James Monroe, Jr.	
Jacobson, Jerome		A.B. 1940, Pomona College	Md.
B.S. in M.E. 1950, University of Illinois	Ill.	Jefferson, Louis Wilson, Jr.	D.C.
Jacobson, Lindsay Kay	Nev.	Jeffrey, Charles Thomas	Va.
Jacobson, Harold	Pa.	Jeffrey, William Raught, Jr.	D.C.
B.S. 1949, Pennsylvania State Teachers College, Indiana		Jeffreys, Ann E.	
Jacobs, Joseph Roche	Mass.	B.S. 1945, Ohio State University	Md.
A.B. 1957, Tufts College		Jeffries, Margaret Elizabeth	D.C.
Jack, Paul Rene, Jr.	Md.	Jaha, Susan Sobreiro	D.C.
B.S. 1950, University of Maryland		Jelinek, Linda Mae	D.C.
Jacobs, Harold Edward	Va.	Jelling, Winifred Morgan	Iowa
A.B. 1950, Western Reserve University		Jenkel, Albert Arthur	D.C.
Jaffe, Marion Olive	Va.	Jenkins, Dolores	Va.
Jaffe, Lawrence Shepherd	D.C.	Jenkins, Frank McLean	Va.
Jagirdar, Samed Hazratpasha	D.C.	Jenkins, Henry Bernice	Fla.
A.B. 1944, University of Bombay		Jenkins, Henry Carl	La.
Jahnsdorfer, Robert Albert	D.C.	Jenkins, June	Va.
James, Arthur John, Jr.	D.C.	Jenkins, Robert Conors, Jr.	Va.
James, Charlotte Miles	Va.	Jennings, Adelaide Preston	
James, Elizabeth Robertson	Md.	A.B. 1951, College of William and Mary	Va.
A.B. 1952, Goucher College		Jennings, Bonner Parnell	D.C.
A.M. 1951, Columbia University		Jennings, Edward Paul, Jr.	Mo.
		Jennings, James Charles	
		L.I.B. 1950, Kansas City University	Md.
		Jennings, Nancy Anne	
		A.B. 1949, The George Washington University	D.C.
		Jennings, Pauline Emogene	D.C.
		Jennings, Robert Reese	D.C.
		A.B. 1951, University of Richmond	

Jennings, Vincent James	Va.	Johnson, Hal Emerson	Md.
A.B. 1947, Yale University		Johnson, Harry Samuel	Va.
Jennings, Warren Abner	Va.	Johnson, James Cullen, Jr.	Okla.
A.B. 1951, University of Kansas City		Johnson, James Donald	N.D.
Jennrich, Harold Walter	Va.	A.B. 1952, Jamestown College	
Ph.B. 1948, University of Wisconsin		A.M. 1952, University of North Dakota	Md.
Jensen, Celia Lightner	D.C.	Johnson, James Walter	D.C.
Jensen, David Elden	Va.	Johnson, Janet Waldman	
Jensen, Dammawd Virginia	Md.	A.B. 1951, The George Washington University	Ind.
B.S. 1942, Wisconsin State Teachers College, La Crosse		Johnson, JoAnn Flo	Va.
Jensen, Emilie K.	Va.	Johnson, John V.	
B.S. 1950, Columbia University		A.B. 1948, College of William and Mary	Va.
Jensen, Homer Mack	Utah	Johnson, Joseph Darwin	D.C.
A.B. 1952, Brigham Young University		Johnson, Joyce Elizabeth	Md.
Jensen, Jack Monsen	Utah	Johnson, Juliet Ann	N.Y.
Jensen, Selma	D.C.	Johnson, Kefler Rayne	
Jenson, Iris Laurene	Idaho	A.B. in Ed. 1946, A.M. in Ed. 1948, The George Washington University	Va.
A.B. 1951, Brigham Young University		Johnson, Lee Harrison, Jr.	
Jernigan, Frances Caroline	D.C.	A.B. 1951, University of Colorado	Md.
Jernigan, Joseph Bernscomb	D.C.	Johnson, Louise Mae	D.C.
Jerome, Dorothea Glenn	Va.	Johnson, Louis Earl	Md.
A.B. 1951, The George Washington University		Johnson, Margaret Elizabeth	N.Y.
Jesswein, Robert Lane	Va.	Johnson, Merion Merck	
Jeton, Francis John	Md.	A.B. 1950, LL.B. 1950, University of Alabama	Md.
A.B. 1952, The George Washington University		Johnson, Marshall Peyton	
Jewell, Edwin Weedon	D.C.	B.S. 1951, University of Maryland	N.Y.
A.B. 1951, The George Washington University		Johnson, Merton Bainer	D.C.
Jira, Jaroslav	D.C.	Johnson, Nanna	Va.
J.D. 1953, University of Prague		Johnson, Phyllis Ruth	
Jobe, Milton Lockwood	Va.	Johnson, Raymond Sand	Md.
Johnson, Robert Howard	Calif.	B.S. in M.E. 1948, University of North Dakota	D.C.
Johnson, Wilford Woodruff	Idaho	Johnson, Rhyley Wade	Ind.
A.B. 1951, Idaho State College		Johnson, Richard Allan	N.Y.
Johns, John Graham	Md.	Johnson, Robert Edward	
B.S. 1955, U.S. Naval Academy		Johnson, Robert Edwin	
Johns, Mildred Van Horn	W.Va.	A.B. in Govt. 1951, The George Washington University	Md.
Johnson, Claudia Stone	D.C.	Johnson, Robert Sumner	Ind.
Johnson, Allen Russell	Ill.	Johnson, Russell Lester	Md.
Johnson, Andrew Robert	Md.	Johnson, Ruth Anne	
Johnson, Augustus Clark	Va.	A.B. 1951, University of Colorado	D.C.
A.B. 1946, A.M. 1948, The George Washington University		Johnson, Senatore	Md.
Johnson, Carl Richard	D.C.	Johnson, Ursula Mae	
Johnson, Carol Joy	Md.	B.S. 1946, University of Tennessee	Va.
Johnson, Chula Long	Calif.	Johnson, William Boscoe	
Johnson, Clarence Bogle	Tenn.	LL.B. 1948, Washington College of Law	D.C.
Johnson, Doris Ann	D.C.	Johnson, William Joseph	Va.
Johnson, Dorothy Lee	D.C.	Johnson, William Lee	Md.
B.S. 1949, Wilson Teachers College		Johnson, Edward Corbin	Md.
A.M. in Ed. 1955, The George Washington University		Johnson, Joanna Carole	Pa.
Johnson, Dorey Virginia	D.C.	Johnson, John Monroe	Md.
Johnson, Douglas Richard	Va.	Johnson, Josephine Elizabeth	
A.B. in Govt. 1952, The George Washington University		Johnson, Margaret Sara Hildreth	
Johnson, Earl Winslow	N.Y.	A.B. 1952, The George Washington University	Md.
B.S. 1942, Pennsylvania State College		Johnson, Richard Smith	
Johnson, Edna Earle	D.C.	B.S. 1950, University of Maryland	D.C.
Johnson, Esther Marie	Va.	Johnson, Walter Eugene	Md.
Johnson, Ethel Dorothy	Va.	Johnson, William Carlisle	D.C.
Johnson, Ethel Irma	Va.	Johnstone, Elizabeth Caroline	N.Y.
Johnson, Eva M.	D.C.	Johnstone, William Henry	
A.B. 1949, A.M. 1951, The George Washington University		Joner, Oweola Colfield	
Johnson, Everett Carl	Va.	B.S. 1949, Alabama State Teachers College, Florence	
Johnson, Gladys Louise	D.C.	A.M. in Ed. 1952, The George Washington University	
Johnson, Gloria Luvina	D.C.		

Joiner, Samuel Alexander	Va.	Jones, William Harry	Maine
Johet, Margaret Josephine	N.Y.	Jonkers, Roy Kenneth	D.C.
Jolly, Dale Carl	Oreg.	Jordahl, Russell Nalton	Md.
B.S. 1951, University of Oregon		B.S. 1926, U.S. Naval Academy	
Jolly, Donald Gilbert	Miss.	Jordan, Harley Ross	Kans.
Alan Walter	D.C.	B.S. 1951, University of Denver	
Jones, Anna Beth	Iowa	Jordan, Harold Borland	Va.
Jones, Aubrey Bennett, Jr.	N.C.	Jordan, James Langford	Calif.
Bess Springfield	Va.	B.S. 1955, U.S. Naval Academy	
Jones, Calvin Clark	Va.	Jordan, Kaye Ann	Texas
Jones, Carl Edmund	D.C.	Jorge, Nicanor G.	Philippines
A.B. 1917, A.M. 1918, Clark College		B.S. in G.E. 1945, University of the Philippines	
Jones, Camell Martha	Va.	Josephana, Robert Charles	N.Y.
Jones, Catherine Edith	D.C.	Josephson, Gilbert C.	Md.
Jones, Charlotte Horvillo	Va.	Joskovitz, Dora Helena	Mich.
Jones, Chester Glenn	Md.	Joslyn, Danforth	D.C.
Jones, Christine Louise	Pa.	Joslyn, Mary Ann	D.C.
Jones, Curtis Harvey		Jovanovich, Bogdan U.	Va.
A.B. 1955, A.M. 1952, Harvard University		Jorwiak, Genevieve Veronica	D.C.
Jones, Daniel Mason	W.Va.	A.B. 1951, Macalester College	
A.B. 1949, Shepherd College		Judd, Dean Burritt	Md.
Jones, David DeLaur	D.C.	Judd, Howard Galloway	D.C.
B.S. 1957, Pennsylvania State College		Judd, Kenneth C.	D.C.
Jones, Doris Virginia	D.C.	Jenkins, Woodrow Wallis	D.C.
Jones, Dorothy F.	Va.	Judson, Humphrey Francis, Jr.	Conn.
Jones, Dorothy Herrmann	Va.	Judy, Earl Wilson	W.Va.
Jones, Douglas Johnson	N.C.	B.S. 1950, West Virginia University	
A.B. 1951, Duke University		Judy, Stelman Wade, Jr.	W.Va.
Jones, Gayle Ann	Pa.	Joett, C. Lane	D.C.
Jones, George Morgan, Jr.	La.	A.B. 1947, Centre College of Kentucky	
Jones, Helen Beckley	Va.	Julian, Harny William	Pa.
B.S. 1952, Syracuse University		Julien, Carl A.	Oreg.
Jones, Horace Rector	Va.	B.S. 1945, University of Washington	
B.S. 1949, Madison College		M.S. 1947, Ph.D. 1952, University of Notre Dame	
Jones, Henry Edward	D.C.	LL.B. 1950, The George Washington University	
Jones, Isaac Thomas	Va.	Junco, Ida Mary	N.Y.
B.S. in Ed. 1944, Pennsylvania State Teachers College, Bloomsburg		Juchiat, Helen Odella	D.C.
Jones, James Robert	D.C.	Juchan, Alice Hampton	Va.
Jones, Jean	Va.	B.S. 1952, Simmons College	
Jones, Jennifer Garnett	Va.	Junkins, Bruce Miller	N.H.
Jones, John Morland	Va.	B.S. in M.E. 1950, University of New Hampshire	
Jones, John Richard	Ill.	Junkins, Philip Dexter	Ohio
Jones, Joseph Morris	Md.	B.M.E. 1951, Ohio State University	
A.B. 1928, University of Maryland		Jurash, Peter Paul	D.C.
Jones, Leonid Bernard, Jr.	Mass.	Justice, Alfred Smith	Va.
Jones, Lois Mae	Pa.	Justice, Glendon Burke	Va.
Jones, Louis Roger	Ca.	B.S. 1950, University of Maryland	
Jones, Louise Elizabeth	D.C.	Justin, A. Christine	Texas
B.D. 1942, Union Theological Seminary		B.S. 1950, Texas State College for Women	
Jones, Mary Beatrice	D.C.	Jwardah, Alice Reid	N.Y.
Jones, Marian Yvonne	Georgia	A.B. 1949, Syracuse University	
Jones, Martha Sue	D.C.	A.M. 1952, Georgetown University	
Jones, Mary Montague	Va.	Jwardah, Wade	D.C.
A.B. 1948, Hollins College		Licentiate in Law 1950, Baghdad Law College	
Jones, Myran Bushong	Va.	Jyllka, Edward Walter	D.C.
B.S.E. 1934, Florida Southern College		B.S. 1951, The George Washington University	
Jones, Norman Paul	Md.		
Jones, Norman William	Pa.		
B.S. 1947, University of Scranton			
Jones, Robert Houston	Mass.		
Jones, Robert Howard	Va.		
A.B. 1950, The George Washington University			
Jones, Robert Therm	Md.		
Jones, Robert Williams	Md.		
Jones, Roy Lamond	D.C.		
Jones, Theresa Ann	D.C.		
Jones, Walter Warren	Va.		
A.B. in Ed. 1950, The George Washington University			

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Kabatchnick, Neil Bernard	Pa.
B.S. 1950, University of Scranton	
Kabeisman, Karl William	S.D.
A.B. 1950, LL.B. 1952, University of South Dakota	
Kabosh, Delmar Jr.	Va.
Kaczensky, Mabel Rupka	Md.

Kafka, Fritz J.D. 1931, Pol. Sc.D. 1934, University of Vienna	D.C.	Kantrowitz, Daniel George A.B. in Govt. 1951, The George Washington University	D.C.
Kahlbaugh, Richard Allen B.S. 1952, Franklin and Marshall College	Pa.	Kanzler, James Edward	N.Y.
Kahler, George Walter B.S. in Ed. 1946, Temple University B.S. in I. S. 1949, Drexel Institute of Technology	Va.	Kapellakis, Anne Alexander	Ill.
Kahler, Mary Ellis A.B. 1949, Swarthmore College B.L.S. 1949, Drexel Institute of Technology	Va.	Kapitan, Frank James, Jr.	Ariz.
Kahn, Asher Daniel Kahn, Howard A.B. 1940, University of North Carolina	D.C. N.C.	Kaplan, Celia	Md.
Kahn, Kalvan A.B. 1948, University of Pennsylvania	Pa.	Kaplan, Eugene	Va.
Kahn, Leon A.B. 1946, LL.B. 1948, The George Washington University	Va.	Kaplan, Fred Lasalle A.B. 1948, Ohio State University	Ill.
Kahn, Melvin A. A.B. 1942, University of Florida	Fla.	Kaplan, Gail Bernadine	D.C.
Kahn, Robert A.B. 1945, University of Pennsylvania	D.C.	Kaplan, Harry A.B. 1948, A.M. 1953, The George Washington University	Md.
Kailan, Hugh Randolph B.S. 1948, Kent State University	D.C.	Kaplan, Harvey Douglas	N.Y.
Kain, Joseph B.E. 1949, Johns Hopkins University	Md.	Kaplan, Jair Shalom A.B. 1946, LL.B. 1948, New York University	D.C.
Kaiser, Stuart Berwin A.B. 1948, Harvard University	D.C.	Kaplan, Jay E.	N.Y.
Kakos, Marianne Patricia	Va.	Kaplan, Judith Anne	D.C.
Kalb, Geraldine Frances	N.Y.	Kaplan, Lillian Epstein	Va.
Kalbaugh, Jack Charles B.S. 1952, Maryland State Teachers College, Frostburg	Md.	Kaplan, Nathan B.S. 1949, College of the City of New York	N.Y.
Kalberer, Robert B.S. 1952, University of Rhode Island	R.I.	Kaplan, Phyllis	D.C.
Kalen, Andrew Charles	Pa.	Kaplowitz, Daniel I. B.S. 1947, College of the City of New York	N.Y.
Kalfus, Ira	D.C.	Kapneck, Phil Raum	D.C.
Kallmeyer, Roy Leslie	Md.	Kapnistos, Nicholas B.S. 1942, Bethany College	Mo.
Kalman, Benjamin	Md.	Kapnius, Karen Alden	Calif.
Kamecka, Maria Henrietta	D.C.	Kapnius, Linda Lothrop	Calif.
Kamkin, Victor Petrovitch	Va.	Kapsianos, William George	D.C.
Kamm, Charles William, Jr. A.B. 1952, Wabash College	Pa.	Karadimos, Peter Spiros A.B. in Govt. 1940, The George Washington University	D.C.
Kanapiski, Kasimir	Iowa	Karas, M. Joel A.B. 1951, Dickinson College	D.C.
Kanda, Masami I.I. B. 1947, Tokyo University	Japan	Karavianis, Nicholas John	D.C.
Kandlbinder, James Allen Karlke, Morris William A.B. 1947, Temple University	D.C. Va.	Karelis, George Andrew	Mich.
Kane, Carol Paula A.B. 1951, Western Reserve University	Ohio	Karmazin, Ted B.S. 1951, Detroit Institute of Technology	D.C.
Kane, Daniel Raymond	Mass.	Karousatos, Fotis Nicholas	Va.
Kane, Elouise Frances B.S. 1952, Wilson Teachers College	Iowa	Karr, Michael Harris B.S. in E.E. 1947, New York University	N.Y.
Kane, Harry Frank	Fla.	Karsted, Jessie Walton	Va.
Kane, James Stephen LL.B. 1949, Catholic University of America	Md.	Karsten, Thomas Loren A.B. 1937, J.D. 1939, University of Chicago	N.Y.
Kane, John Francis	Ind.	Karstens, Ruth Flora	D.C.
Kane, Regina Ellen	Md.	Karver, Elliot	D.C.
Kane, William Matthew, Jr. A.B. 1950, College of the Holy Cross	D.C.	Karvdakis, Mahel	Mass.
Kangas, Willard Tauno	D.C.	Kase, Francis Joseph Doctorate Law 1936, Charles University, Prague	Mich.
Kannowski, David Max A.B. 1930, A.M. 1951, University of North Dakota	D.C.	Kash, Esther Chene	Va.
		Kashden, Laurence B.S. 1947, University of Chicago	Mich.
		Kasickie, Ludwig G. A.B. 1952, Michigan State College	D.C.
		Kashin, Jacqueline Sylvia	N.Y.
		Kasmir, Sidney	D.C.
		Kaspar, Josef Lawson	Va.
		Kassebaum, Robert Gray	D.C.
		Kassel, Simon	D.C.
		Kast, Richard deVeau	Mass.
		Kastantin, Julius Joseph B.S. 1932, Pennsylvania Military College	

Katalinich, Mary M.	Minn.	Keas, Mary Ellen	Iowa
Katinas, Mary John	D.C.	Keating, Mary Dolores	D.C.
Katrivancos, James	Va.	A.B. 1943, The George Washington University	
Katz, Edward Eliot	N.Y.	Keaveney, Donald Charles	Md.
B.S. 1950, The Citadel		B.S. 1943, Bowdoin College	
Katz, Jerrold Jacob	D.C.	LL.B. 1951, American University	
Katz, Julius	Md.	Keck, Edwin William	Pa.
Katz, Murray	N.Y.	B.S. in Ed. 1948, Temple University	
B.Ch.E. 1947, College of the City of New York		Keckler, Robert Samuel	Md.
Katz, Samuel	D.C.	B.S. 1947, Washington and Lee University	
B.S. 1950, U.S. Naval Academy	Pa.	Keefe, Ann Marie	Ala.
Katz, Sherman Aaron		Keegan, James Daniel	Md.
A.B. 1949, University of Pittsburgh	D.C.	Keegan, Patricia M.	D.C.
Kaufman, Albert Gerald	Minn.	Kechn, Pauline Alice	D.C.
Kaufman, Dorothy Louise		Keen, Edward Sharn	Va.
A.B. 1950, Gustavus Adolphus College	Md.	Keen, Owen Allen	Va.
Kaufman, Lynne G.		Keenan, Charlotte Mary	Md.
A.B. 1940, The George Washington University		Keenan, Eleanor Jean	Va.
Kaufmann, Yolande Marie-Theresa	D.C.	Keney, John Christopher	Pa.
Kaulman, Herbert	Va.	B.S. 1947, University of Scranton	
Kaulman, Lillie	Va.	LL.B. 1949, Dickinson College	
Kaulman, Miriam	D.C.	Keasling, Hugh Conrad	Md.
B.S. 1941, Wilson Teachers College		Keever, Donald Bain	N.C.
A.M. in Ed. 1947, The George Washington University		Kehoe, Russell P.	Va.
Kaufman, Richard Miles	Md.	Keiser, Ray Edward	Md.
Kaufman, Roger Alexander	D.C.	A.B. 1940, Miami University	
Kaufman, Sidney	Conn.	Keisler, Carl Edward	Md.
A.B. 1951, The George Washington University		Keisman, Ruth	N.J.
Kaul, Kenneth Dale	D.C.	Keith, Alec Dell	Ariz.
B.B.A. 1952, Washburn Municipal University of Topeka		Keith, Evelyn Elma	Nebr.
Kavruk, Charlotte Ann		B.S. in H.E. 1944, University of Nebraska	
Kavruk, Samuel	Ohio	Keithley, Anita Chestena	D.C.
B.S. 1947, M.S. 1949, College of the City of New York	N.Y.	Kellam, Donald Swift, Jr.	Va.
A.M. in Govt. 1950, The George Washington University		A.B. 1952, The George Washington University	
Kay, Alan	Va.	Kelleghan, Gordon Thomas	N.Y.
Kay, Jeanette Ruth	D.C.	A.B. 1952, The George Washington University	
Kay, Marvin Stanley	D.C.	Keller, Allan Francis	Ohio
Kay, Alfred Howard	N.J.	Keller, Eugenia	D.C.
A.B. 1951, The George Washington University		B.S. 1947, Purdue University	
Kaye, Glenn Jean	D.C.	Keller, Harry Obed, Jr.	Va.
Kaye, Isabelle Blanche	Md.	A.B. 1949, Shepherd College	
A.B. 1943, University of California at Los Angeles		Keller, Mary Ann	Va.
Kaye, John Braxshaw	Wash.	Keller, William Adam	Md.
Kaye, Miles Charles	Md.	Keller, William Leonard	Texas
Kazlow, Kay Joan	Pa.	LL.B. 1950, Southern Methodist University	
Keable, Byron Waldo	D.C.	Kellet, James Edmund	Pa.
A.B. 1940, A.M. 1941, University of Pittsburgh		Kelley, Charles William	D.C.
Keefe, Edward James	D.C.	Kelley, Colleen Nell	D.C.
B.S. 1951, Wilson Teachers College		Kelley, David Philip	
Keene, Anna Mary	Vt.	B.S. in E.E. 1949, Lehigh University	
B.E. 1940, Vermont Teachers College		Kelley, George Ridgely	Md.
Keeney, John James	D.C.	Kelley, Helen Vivian	D.C.
B.S. 1948, Fordham University		Kelley, Hubert W., Jr.	D.C.
Keeney, Margaret Adele	Pa.	A.B. 1952, University of Kansas City	
Keena, John Preston	Md.	Kelley, Melvin James	S.C.
B.S. in M.E. 1942, Pennsylvania State College		A.B. 1950, University of North Carolina	
Keena, Joseph Patrick, Jr.	Md.	Kelley, Thomas John	D.C.
LL.B. 1941, Johns Hopkins University		A.B. 1950, University of Minnesota	
Keary, Edmonia Catherine	D.C.	Kellogg, Robert Stephen	Md.
		Kelly, Constance Anne	D.C.
		Kelly, Daniel Morris	Va.
		B.C.E. 1947, Cornell University	
		LL.B. 1952, Georgetown University	
		Kelly, David Lee	Mich.

Kelly, Dee J.	Texas	Kennedy, Mary Ann	N.Y.
A.B. 1950, Texas Christian University		Kennedy, Richard Dean	Conn.
Kelly, Elizabeth K.	D.C.	B.S. in E.E. 1948, Carnegie Institute of Technology	Ky.
A.B. 1941, Hunter College		Kennedy, Warren L., Jr.	D.C.
Kelly, Elizabeth Anne	D.C.	B.S. 1949, University of Kentucky	Va.
Kelly, Eugene Raymond	N.Y.	Kennelly, Joseph Gerard	N.Y.
A.B. 1950, Dartmouth College		Kennon, Lawrence John	
A.M. 1952, University of Pennsylvania		A.B. 1950, University of California	
Kelly, Frank Bernard	D.C.	Kenny, Raymond Joseph	
Kelly, J. C.	Va.	B.S. in Ch.E. 1950, University of Oklahoma	Va.
Kelly, James Edward	D.C.	Kent, Edward Francis	
Kelly, John Gusta	D.C.	A.B. 1934, University of Hawaii	Utah
Kelly, John Joseph	D.C.	L.L.B. 1951, Columbia University	Va.
Kelly, John Richard	Md.	Kent, Theodore Robert	
Kelly, Joseph John	Pa.	Keogh, William Thomas	
B.S. 1949, Ohio State University		B.S. in Ch.E. 1942, Kansas State College of Agriculture and Applied Science	D.C.
Kelly, Kenneth Max	D.C.	L.L.B. 1952, Stanford University	Fla.
A.B. 1947, Municipal University of Wichita		Keown, Glendola	
Kelly, Mary Clare	D.C.	Kephart, Ralph Claude	
Kelly, Philip Patrick	Mass.	B.S. 1922, U.S. Naval Academy	Va.
Kelly, Raymond Edward	Va.	M.S. 1940, Columbia University	
Kelly, Robert Clay	Mo.	Kepler, John Zehner	N.C.
L.L.B. 1932, Washington University		B.S. 1949, Northwestern University	N.C.
Kelly, Robert Wendell	Mass.	Kepley, Elizabeth	
Kelly, Stanley Leish	Va.	Kepley, Thomas Alvin	D.C.
Kelly, Thomas Vincent	Iowa	B.S. 1950, North Carolina State Teachers College	D.C.
Kelly, Walter Christian	D.C.	Kerekes, Richard Karl	
Kelly, William B., Jr.	Ky.	Keish, Burton	
B.S. 1949, University of Louisville		A.B. 1952, The George Washington University	D.C.
Kelsey, David	Md.	Kern, Charles Ellsworth, Jr.	SC
A.B. 1942, University of Rochester		Kern, Jean Adele	Mo.
Kelsey, Frances Eloise	D.C.	Kern, John Jerome	
A.B. 1926, University of Arizona		A.B. 1940, Catholic University of America	N.Y.
B.S. in L.S. 1940, University of Illinois		Kern, Kenneth Jay	D.C.
Kelan, Arthur David, Jr.	Md.	Kern, Tempie Christine	Va.
A.B. 1952, The George Washington University		Kern, Willis Browning	Va.
Kelson, Dorothy K.	D.C.	Kerns, Norman Sigel	Va.
Kemp, Charles William	N.J.	Kerr, Alex Arthur	
B.B.A. 1951, Upstate College		B.S. 1944, U.S. Naval Academy	
Kemp, Henry Wessner	Pa.	Kerr, David Renwick	
A.B. 1950, The George Washington University		A.B. 1944, Columbia University	
Kemp, Katherine Lee	Md.	A.M. 1952, The George Washington University	D.C.
B.S. 1951, St. Joseph College		Kerr, Lucile Minton	Ind.
Kemper, Gerhard	D.C.	B.S. 1950, Bowling Green State University	
Kenady, Harold William	Md.	Kerr, Melvyn Herbert	Va.
Kendal, Ralph St. Clair	Pa.	B.S. 1941, Indiana University	D.C.
B.S. 1951, Pennsylvania State College		Kerr, Victor Harold	D.C.
Kendrick, Elizabeth Rebecca	N.C.	Kerschbaum, John Casper	Va.
A.B. 1942, Greensboro College		Kerschbaum, Janet Rea	
Kendrick, John Whitefield	D.C.	Kerwan, Thomas John	
A.B. 1917, A.M. 1939, University of North Carolina		B.S. 1940, Pennsylvania State Teachers College, Mansfield	
Kendrick, Maxine Fillyaw	D.C.	A.M. in Ed. 1940, The George Washington University	Md.
Kenkel, John Bonaventure	Md.	Kerwin, Timothy Daniel	Mo.
A.B. 1940, Colgate University		B.S. 1950, Randolph-Macon College	Va.
L.L.B. 1952, The George Washington University		Kessler, Edwin Lyman	D.C.
Kennan, Dana Ellwood Medlock	Md.	Kessler, Irving Carl	N.Y.
Kennan, Richard Barnes, Jr.	Md.	Kessler, Floyd Sylvan	D.C.
Kennard, Anne Eloise	Va.	Kessler, Gary	D.C.
Kenneally, Cecilia Mildred	D.C.	Kessler, Gunther Karl	Pa.
B.S. in Ed. 1949, Boston University		Kessler, Thomas Barry	
Kennedy, Claude Alvin, Jr.	Md.	Ketner, William Harry	
Kennedy, James Jarvis	Va.		
Kennedy, James John	D.C.		
Kennedy, James Joseph	D.C.		
A.B. in Govt. 1951, The George Washington University			

Keto, George John B.S. in M. E. 1942, Case Institute of Technology M.S. in I.E. 1947, Columbia University LL.B. 1950, Harvard University	D.C.	Kindness, Thomas Norman A.B. 1951, University of Maryland	Md.
Ketron, Katherine Cressey A.B. 1942, Goucher College	Md.	King, Bronson Smalley King, Diana Harbury A.B. 1948, University of London	D.C. D.C.
Kettner, Marilyn Faye Kettner, Harry William Kettner, Carlton A. Bert	D.C. D.C. Md.	King, Elvina Frances King, Ernest Lee King, Ethel Virginia Anne King, Henri Hien-Fong A.B. 1946, Cornell University	N.Y. D.C. Md. Md.
Kew, Martha Gwendolyn Kew, Peter John Kessler, Arthur Seymour B.S. 1951, University of Pennsylvania	D.C. D.C. D.C.	King, Henry Lord Page, Jr. B.S. in E.E. 1948, University of Kansas	Md.
Kessler, Rudetta Marcia Kessler, Samuel Jay Kesson, Ray Kenneth Khan, Mohammed Salim A.B. 1947, University of Punjab	D.C. D.C. D.C. Pakistan	King, Hubert Graham King, James Cecil A.B. 1949, A.M. 1950, The George Washington University	D.C. Pa.
Kheir, Kama, M. Licence en Droit 1943, University of Fouad I, Cairo	Egypt	King, Joe Lee King, Joseph Aloysius King, Leon Herbert King, Margaret King, Morton Lionel King, Nell Amelia King, Rita Marie A.B. 1948, West Virginia Wesleyan College A.M. in Ed. 1949, The George Washington University	Ala. Md. W. Va. D.C. D.C. D.C. Pa.
Kilham, Edward Michael Kilmer, Della Marie Kilmer, Doris Theresa Kirk, Francis Pierce Kirkwood, Louis Charles Kirkwood, Louis Allene Kirkwood, John William B.S. 1950, Lafayette College	Md. D.C. Mass. Va. D.C. Pa. Pa.	King, Ruth Evelyn B.S. in B.A. 1944, LL.B. 1946, University of South Dakota	Ohio
Kiel, Frank Wilson A.B. 1950, University of Pittsburgh	Pa.	King, William Sanford Kings, Ruth Helen Kingsley, Paul Luther B.S. 1949, Northwestern University M.S. 1950, University of California at Los Angeles	Va. D.C. Md.
Kiley, Betty Lea Kiley, John Clement, Jr. B.S. 1943, J.D. 1948, DePaul University	Va. Ill.	Kinnahan, Thomas Paul Kinnear, John Breckenridge Kins, Walter Mason, Jr. LL.B. 1951, University of Virginia	D.C. D.C. D.C.
Kieren, Jean Camille Kil, John Y. C. Kilby, Bernard Leo, Jr. Kilgus, Claude Edgar Kiley, Margaret Ann A.B. in Ed. 1951, University of Buffalo	D.C. Hawaii D.C. Calif. D.C.	Kinsel, Martha Wiley Kinsley, Richard Gareth Kinsley, James Richard Kinsley, Robert Thomas B.S. 1949, Yale University Kinsman, Robert Gordon A.B. 1950, The George Washington University	D.C. D.C. D.C. Va. D.C.
Kilslen, John Joseph Kinsore, Robert Martin B.S. 1947, Georgetown University LL.B. 1952, The George Washington University	D.C. W. Va.	Kipp, Henry Matthew Kipp, Louis Gertrude Kipp, Clarence Turner, Jr. B.S. 1952, American University	Fla. Md. Va.
Kilgore, Shirley Schubert Kilpatrick, Edward Floyd A.B. 1941, University of Missouri Kilheimer, Marion Flora Kilz, Max Buford Kim, Alexander Young Ha A.B. 1940, University of Hawaii	D.C. D.C. D.C. Va. Hawaii	Kirch, Leo Loden Kirby, James Chase, Jr. Kirby, Jerome Francis Kirby, John Joseph Kirby, Lois Carole Kirby, Taylor Herman, Jr. A.B. 1949, Birmingham-Southern College	Va. Md. D.C. Md. Ala.
Kim, Daniel Tamook B.D. 1941, Oberlin College Kirchall, Glenn Philip Kirchick, Elizabeth Caldwell Kirn, Elsie G. Kirn, Harold Dean Kirn, Richard William Kinast, Albert Joseph B.S. in M.E. 1940, University of Wisconsin	D.C. D.C. Mass. Md. D.C. D.C. D.C.	Kirk, Barbara Jane Kirknes, Edward William Kirk, Charles Eugene Kirk, Helen Rose Kirk, Michael James Kirkland, Patricia Ann Kirkley, William Joseph B.S. 1946, U.S. Coast Guard Academy	Va. Pa. D.C. Va. Va. Va.
Kinder, Byron Lee Kinselman, Eugene John B.S. 1941, University of Illinois Kinsley, Lee Murray A.B. 1942, Western Maryland College Kindness, Gordon Robertson A.B. 1950, University of Maryland	Mo. Ill. Va. Md.	Kirsch, Arthur David Kisson, Stanley Martin Kirtley, John Harrell	Md. D.C. Va.

Kirvida, Leonard	Mich.	Klitenic, Simon	D.C.
B.E.E. 1950, University of Minnesota		B.S. 1948, University of Maryland	
Kirwin, James Joseph III	N.Y.	M.S. 1949, Municipal University of	D.C.
Kischitz, Nicholas Michael	N.H.	Wichita	Va.
B.S. in E.E. 1949, University of		Klopman, Eliaz	Pa.
New Hampshire		Kloski, Theodore Leonard	Md.
Kishpaugh, Gloria Dawn	Mich.	Klotz, Helen Patricia	
A.B. 1946, University of Michigan		Klor Dahl, Gordon Jacob	
Kisseleff, Morton	D.C.	Klukowski, Stanley Zenon	Va.
Kistner, Rudolph Hersan	N.Y.	A.B. 1948, University of Wisconsin	Va.
A.B. 1950, A.M. 1951, Syracuse		Klumfoot, Clarence Reuben	Md.
University		Klut, Frieda Louise	N.Y.
Kitchen, James Paul	D.C.	Knapp, Harlan Howard, Jr.	Va.
Kitchen, Sandra Lee	Va.	Knapp, James P.	N.D.
Kite, William Jackson, Jr.	D.C.	Knaut, Jack William	
Kitler, M. Paul	D.C.	Knaut, Robert Clinton	Kan.
Kitsoulis, Michael Thomas	D.C.	B.S. 1943, U.S. Naval Academy	
Kittrell, Nancy Morris	N.C.	Knaus, Dorothy Maye	D.C.
Kitte, Louise Melissa	D.C.	B.S. 1941, Kansas State College	D.C.
Kivell, Betty Beyer	Va.	Knee, Roma Diane	Texas
Kizler, John Willis	Texas	Kniaz, Judith Holland	Ind.
B.S. 1949, Northwestern University		Knight, Billy Jeffery	
A.M. 1951, The George Washington		Knight, Gerry Lloyd, Jr.	
University		B.S. 1947, Purdue University	Md.
Klaasoe, Robert Allen	Mich.	Knight, Marvin, Jr.	Md.
Klanderman, Mary Josephine	Ill.	Knippenburg, Ormond Frederick	D.C.
Klasinski, Clarence Aloysius	Wis.	Kniskern, Peter Marshall	D.C.
Kleh, Thomas Robert	D.C.	Knispel, Ruth Agnes	D.C.
Kleiman, Ansel	D.C.	Knoll, Ronald David	N.Y.
B.S. 1950, Ohio State University		Knopp, Edna	Mo.
Klein, Charles Nicholas	Va.	A.B. 1943, Brooklyn College	Pa.
Klein, David Joel	D.C.	Knopp, Emily F.	
B.Ch.E. 1943, Cooper Union		Knorr, Francis George	D.C.
Klein, David Mendel	D.C.	A.B. 1940, University of Pittsburgh	Va.
Klein, Ernest Joseph	D.C.	Knoth, Ronald Charles	
Klein, George John	N.Y.	Knott, Lancaster Benjamin	Iowa
Klein, Joanne Marie	Md.	A.B. 1952, St. John's College	Md.
Klein, Max	R.I.	Knott, Roger Clark	
B.S. 1948, University of Massachusetts		Knotts, James Owen III	Ga.
Klein, Morris	D.C.	A.B. 1950, University of Maryland	D.C.
B.S. 1951, The George Washington		Knowles, John David	N.Y.
University		Knowles, Robert Clinton	Va.
Klein, Robert Max	Va.	Knowlton, Lucia Mai	D.C.
A.B. in Govt. 1949, The George		Knos, David Kaywin	
Washington University		Knox, David W.	Va.
Kleitz, Julius Matthew	N.Y.	B.E.E. 1941, University of Florida	
Klemm, Warner Arthur	Utah	Knox, James Howard	Calif.
Klieforth, Alexander Alfred	Va.	A.B. 1934, College of William and	
A.B. 1940, St. Norbert College, Wis.		Mary	Ind.
A.M. 1941, Fletcher School of Law		Knox, Paul Raymond	D.C.
and Diplomacy		A.B. 1950, University of California	D.C.
Kline, Ann Elizabeth	Va.	Knudson, Martin Irving	
Kline, Anne Mears	Va.	Kober, Harry Patrick	
Kline, Ira	Md.	Kobler, Turner Spencer	
B.S. 1948, American University		A.B. 1952, Louisiana State University	
M.S. 1950, The George Washington		and Agricultural and Mechanical	Va.
University		College	
Kline, Jerome Paul	D.C.	Koca, James Frank	Va.
Kline, Ralph Henry	Pa.	B.S. 1950, University of Nebraska	D.C.
A.B. in Govt. 1951, The George		Koca, Janet Pauline	D.C.
Washington University		Koch, Dorothy Jane	N.Y.
Kline, Raymond Adam	Pa.	Kosh, Stanley Allan	Va.
A.B. 1950, Lebanon Valley College		Roehan, Estelle S.	Md.
Kline, Robert Charles	Va.	Kockler, Jessie	D.C.
B.S. 1951, Pennsylvania State College		Kodowski, Dorothy Elizabeth	D.C.
Klingaman, William Langdon	Md.	Koepel, Lawrence	Calif.
A.B. 1936, Dartmouth College		Kongler, Dorothy Helen	
A.M. 1949, Columbia University		Koschl, Helen Theresa	
Klingenhagen, Ann Williams	N.Y.	Koenig, James Frederick	
Klitenic, Maxine Foutes	D.C.	A.B. 1949, University of California	D.C.
		at Los Angeles	
		Koenig, Joseph William, Jr.	

Koepp, Vera Shiplett A.B. 1946, Earlham College	Va.	Koster, Bernice Louise	D.C.
Kohr, Daniel Allen	Md.	Kostic, Steven	Pa.
Kosian, Ruth Doris	D.C.	A.B. 1951, University of Pittsburgh	
Kosovito, Sulo Charles	Md.	Kostik, Shirley Sunderman	Va.
Kosovian, Arcila Vahan	Mass.	A.B. 1949, The George Washington University	
Kotek, Jane Phyllis	Pa.	Kostka, Fred Paul	R.I.
Kotas, Helene	Mass.	B.S. in M.E. 1942, University of Rhode Island	
Kolavitski, George	D.C.	Kostka, Vera Vivien	Va.
Kolb, Janice Swoford	Md.	Kotapish, William Robert	Mich.
Kolb, Kenneth Edward	D.C.	A.B. 1950, A.M. 1951, University of Michigan	
Kolback, Sofia Joanna	N.Y.		
Kolchak, Michael	Conn.	Kotler, Stanley	D.C.
Kolouzey, Helen Martha	N.Y.	Kotz, Herbert Louis	D.C.
A.B. 1950, Syracuse University		Koury, Enver Mousa	D.C.
A.M. 1952, Boston University		Koury, Eugene Thomas	N.M.
Komara, Claire Bette	D.C.	A.B. 1949, University of New Mexico	
Komenda, Frank Joseph	D.C.	Kousaros, Harry George	Pa.
Kominaki, John	Pa.	B.S. 1950, Albright College	
B.S. 1950, Pennsylvania State College		Koustenis, Gust George	D.C.
Komlenich, Gertrude A.	D.C.	Koutras, George Anest	D.C.
Koma, June	D.C.	Koutras, Louis Anest	D.C.
Kona, Steve George	Ind.	Kouzel, Samuel Irwin	D.C.
Konikow, Ella Klaiman	Md.	Kovach, Bernard Clement	Pa.
A.B. 1937, Radcliffe College		Kovacs, Frank Gabriel	Pa.
Konold, William George	Ohio	Kovacs, Frank William	N.J.
B.E.E. 1949, Cornell University		Kover, Allan Norman	D.C.
Konze, Barbara Gouvalas	Va.	B.S. 1941, College of the City of New York	
Koogle, George Grayson, Jr.	Va.	Kovoch, Bernard Clement	Pa.
Koons, George Hill	Va.	Kramer, Dorothy Anne	Md.
Koontz, Eleanor Leona	D.C.	Kraft, Charles Albert	N.Y.
Kopack, Lorraine Mae	Ohio	Kraft, Simon Richard	Va.
Kopas, Joseph Thomas	Mass.	Krahfort, Dagmar Gertrude	Calif.
Kopek, John Longin	N.Y.	Krakes, Gloria Boom	D.C.
Kopkin, Ethel Hilowitz	D.C.	Krakes, Paul Joseph	D.C.
Koplowitz, Daniel	D.C.	A.B. 1950, University of Pittsburgh	
B.S. 1937, College of the City of New York		Kramer, Carl Aaron	Md.
Kopp, JoAnn Patricia	Mass.	Kramer, Edith Nash	D.C.
Koppelon, Florence	Md.	Kramer, Fred	Md.
Kopelias, Margot Marion	D.C.	Kramer, Gerson Balfour	D.C.
Korb, Loris David	Md.	A.B. 1951, Rutgers University	
A.B. 1939, A.M. 1952, Boston University		Kramer, Irving I.	
Korcheck, Stephen Joseph	Pa.	B.S. 1949, College of the City of New York	
Kordell, Alfred John	Pa.	A.M. 1950, C.E. in A.I. 1952, Columbia University	
Korablatt, Martin Aaron	D.C.	Kramer, Joshua	Md.
Korkolis, Betty Ann	D.C.	Kramer, Julian	D.C.
Kore, Charles William	N.J.	B.S. 1947, College of the City of New York	
Kornhauser, Alvin	D.C.	Kramer, Marvin Lewis	Va.
A.B. in Govt. 1952, The George Washington University		B.S. 1951, The George Washington University	
Korna, Vazel Eben	Md.	Kramer, Norman Clifford	N.Y.
B.S. 1949, U.S. Naval Academy		B.S. 1948, The Citadel	
A.M. in Govt. 1952, The George Washington University		M.S. 1950, The George Washington University	
Koronas, Ann	N.J.	Kramish, Arvin Morris	Colo.
Korpeck, Jerome Eli	N.Y.	A.B. 1947, University of Denver	
A.B. 1947, University of Rochester		Krantler, Ted	N.I.
Kosberg, Alfred Axelrod	Calif.	Krasovec, Frank Peter	Va.
A.B. 1939, New York University		Kraus, Donald George	D.C.
Kosch, Don Carl	Iowa	B.E.E. 1950, Clarkson College of Technology	
A.B. 1951, Coe College		Kraus, Jerome	Md.
Koshkin, Lora McNeill	Ala.	A.B. 1942, University of Chicago	
Koshnick, Edward Walter	Pa.	B.S. in E.E. 1947, University of Illinois	
Kosh, Arthur Eugene	Mich.	Kraus, Russell Warren	D.C.
B.S. 1944, Northern Michigan College of Education		E.E. 1950, Clarkson College of Technology	
Koski, Lemuel Rachel	Va.		
Koski, Raymond James	D.C.		
Koslosky, Joan C.	Minn.		
A.B. 1951, College of St. Catherine			

Kraus, Stephen Victor	N.Y.	Kulish, Joseph Thomas	Pa.
Krein, Arthur Nicholas	D.C.	Kulback, Joseph Henry	D.C.
B.S. in Eng. 1949, Case Institute of Technology		Kulp, Jean Evelyn	D.C.
Kreiss, Lester Claude	Va.	Kulp, John Wesley	
Kreithen, Alexander	D.C.	B.S. 1951, The George Washington University	W.V.
A.B. 1948, Temple University		Kumera, Robert James	D.C.
Kremen, Jerome	Md.	Kumis, Paul Spiro	W.V.
A.B. 1948, Johns Hopkins University		Kump, Mary Gamble	
Kresan, Eugene Michael	Conn.	A.B. 1916, West Virginia University	N.Y.
Kressin, Louis Charles	D.C.	Kunda, Walter	D.C.
Krichell, Irvin I.	Pa.	Kundrath, Robert Joseph	Pa.
B.S. 1951, Pennsylvania State College		Kunsak, Stephan William	
Kriemelmeyer, Harry, Jr.	D.C.	A.B. 1942, The George Washington University	Va.
Krikorian, Araxie Elizabeth	France	Kunze, Ray A.	
Krikorian, Issky Damsel	France	M.S. 1961, University of Chicago	Va.
Krinsley, Daniel Bernard	D.C.	Kuperman, Morton	
A.B. 1944, Brooklyn College		B.S. 1918, College of the City of New York	
M.S. 1949, Brown University		A.M. 1900, The George Washington University	Pa.
Krossoff, Lettie Marvin	Md.	Kurdell, Alfred John	D.C.
Kratzer, Herbert	N.Y.	Kurkjian, Bading Malcolm	
A.B. 1948, Syracuse University		B.S. 1943, Massachusetts Institute of Technology	Md.
A.M. 1949, University of Pennsylvania		Kurland, Lillian Paris	Va.
Krivickas, Thomas	D.C.	Kursch, Robert Francis	Md.
B.S. 1948, Georgetown University		Kurth, Guenther Hanns	
M.S. 1949, The George Washington University	D.C.	B.S. in S.S. 1950, Washington University	Md.
Krizay, Jane Garland	D.C.	Kurth, James Albert	Va.
Krizay, John		Kurth, William Herman	Md.
A.B. in Govt. 1951, The George Washington University		A.B. 1941, University of Virginia	
Krol, Casimir Thaddeus	Ill.	Kurtz, Grace Wynona	1951
A.B. 1947, St. John's College		B.S. 1936, Wilson Teachers College	
Kroll, Henry August	Md.	Ed.M. 1943, University of Maryland	D.C.
A.B. 1934, Carnegie Institute of Technology		Kurtz, O'Dean Leonard	
Kroner, Eleanor Rose	Ohio	B.S. 1950, Iowa State College	
Kroner, Lawrence Roy	Ill.	Kurtz, Stanley Morton	
A.B. 1951, The George Washington University		B.S. 1949, M.S. 1950, The George Washington University	Va.
Kronstadt, Nathan	N.Y.	Kurtz, William Louis	Md.
Kronstedt, Stanley Burton	Minn.	Kurz, Harry George	Md.
A.B. 1952, University of Minnesota		B.S. 1951, University of Maryland	
Kropog, Elizabeth Ann	D.C.	Kurz, Philip Elledge	D.C.
Kropog, Patricia Ann	D.C.	B.S. 1942, University of Maryland	Md.
Kroumov, James Adam	Md.	Kushen, Betty Sandra	
Kryshtalsky, Jarosla Sewolod	N.I.	Kushner, Alvin Julian	Va.
Kuam, Ernest Ludwig	Va.	A.B. 1951, University of Maryland	Pa.
A.B. 1947, University of Washington		Kusner, John Stroud	
Kuba, Irene Margaret	Pa.	Kusner, Juanita Vail	
Kucera, Frank Charles	Ill.	B.S. 1923, Cornell University	Haw.
B.S. in M.E. 1951, Purdue University		A.M. 1927, Columbia University	D.C.
Kudvsh, Morton	N.Y.	Kusumoto, Earl Hisahi	Id.
L.L.B. 1952, The George Washington University		Kurby, Martha	
Kuebler, Wolf	D.C.	Kutramanes, Constantine Peter	Pa.
Kuemmerling, Ted Denise	D.C.	B.S. 1942, Northwestern University	Pa.
A.B. 1950, Principia College		M.S. 1950, University of Wyoming	Pa.
Kuenstle, William T.	D.C.	Kozas, Edward Joseph	Pa.
A.B. 1951, University of Maryland		Kozas, Paul	
Kuhl, Arthur Mathias	Mont.	Kverkas, William Thomas, Jr.	Green
A.B. in Govt. 1950, The George Washington University		B.S. 1952, University of Pennsylvania	D.C.
Kuhn, Evelyn Jeannette	Md.	Kyriakos, John Elias	
Kutems, Frederick Henry	N.J.	Kyriakos, Chas. William	Id.
B.S. 1950, Union College		A.B. 1948, A.M. 1949, The George Washington University	
Kulback, Sofia IoAnna	N.Y.	Kyser, Walter Eugene	Texas
Kulda, Nelson Chilcoat	Md.	B.C.S. 1950, University of Georgia	D.C.
Kulick, Joseph A.	Va.	L	
B.S. 1949, Pennsylvania State Teachers College, Bloomsburg		Laake, Selma William	
		Laborde-Montaner, Maria Teresa	

LaPolt, Shirley Anna	Ohio	Laufer, Edith Erica	D.C.
LaPolt, William Stanley	Ohio	Laughery, Elsie Florence	D.C.
LaPrade, Gertrude Cecelia	D.C.	Laughlin, Barbara Joan	Va.
Laric, Ivan Gerald	D.C.	Laughlin, Charles Russell, Jr.	Md.
A.B. 1940, Brown University		Laukatis, Walter Anthony	N.Y.
Larimore, Alanson Lee	Md.	Laux, James Joseph	
A.B. 1951, Washington College		B.S. 1948, Syracuse University	N.Y.
Larison, Oliver Kusler	Md.	Lavagnino, John Louis	La.
A.B. in Ed. 1939, The George Washington University		Lavigne, Merlin James	D.C.
Larkin, James Ezelius III	Va.	Law, Linda Lou	Md.
Larkin, Patrick Joseph	D.C.	Law, Russell Lewis	Md.
Larkin, Roberta Lankford	Va.	B.S. 1950, Selton Hall College	Va.
A.B. 1934, The George Washington University		Lawlor, Thomas Jerome	
Larrick, Anne Chadwick	Md.	Lawrence, Derek Peter	
Larrick, Laura Cummings	Va.	B.M.E. 1948, Clarkson College of Technology	Va.
Larsen, Barbara Ann	D.C.	Lawrence, Jack Allen	
Larsen, H. Colle	Miss.	A.B. 1951, University of Dubuque	N.C.
Larsen, Jack	Mich.	Lawrence, James Fugate, Jr.	
A.B. 1942, Princeton University		B.S. 1940, University of North Carolina	Md.
A.M. 1947, University of Michigan		Lawrence, John Craig	Va.
Larsen, Morris Alven	Iowa	B.S. 1939, U.S. Naval Academy	D.C.
Larsen, Nancy Joy	D.C.	Lawrence, Lester Albright	N.Y.
B.S. 1951, Union University		Lawrence, Myra Jeanne	
Larson, Alice Kennedy	D.C.	Lawrence, Sidney Jack	N.C.
Larson, Charles Howard	Ind.	B.S. 1931, U.S. Naval Academy	
A.B. 1952, Indiana University		Lawrence, Simon S., Jr.	N.J.
Larson, Dale Harold	Ill.	B.S. 1949, University of North Carolina	
Larson, Gordon Floyd	Va.	Lawrence, William Harry	
Larson, Lloyd Warren	Minn.	M.E. 1950, Stevens Institute of Technology	D.C.
A.B. 1946, A.M. 1947, University of Minnesota		Laws, Bolitha James	Va.
Larson, Nelson Siegfred	Mich.	A.B. 1951, Dartmouth College	Va.
Larson, Raymond Morris	D.C.	Lawson, Donald Burke	
B.S. 1954, Bradley University		Lawson, Howard Burger	
Larson, Robert LeRoy	Mont.	A.B. 1950, The George Washington University	Va.
A.B. 1949, Montana State University		Lawton, Richard Stanley	Va.
Larson, Walter Julius	Ind.	Lay, James Dominic	Va.
LaRue, Mary Strickler	D.C.	Layer, Kenneth Henry	Pa.
LaRue, Pauline	D.C.	B.S. 1950, Ithaca College	
LaRue, Robert Emmett	D.C.	Layman, Richard Paul	
A.B. 1952, The George Washington University		B.S. 1950, Pennsylvania State Teachers College	D.C.
Lary, Virgil Pendleton, Jr.	D.C.	Layne, Edward Booker, Jr.	
B.S. 1948, University of Kentucky		A.B. 1951, University of Maryland	Va.
Lash, Sally Forrest	D.C.	Layne, Ennis Cecil, Jr.	
Laskin, Lenore Jean	D.C.	B.S. 1950, The George Washington University	D.C.
Latch, Edward Gardiner, Jr.	D.C.	Layne, Nancy Hill	Pa.
Lotham, Rowce	D.C.	Laxton, Cleo Franklin	Va.
Latimer, George Webster	Md.	Laxton, Horace Leon	D.C.
Latimer, Miriam	D.C.	Lazaroff, Philip	Mass.
Latino, Jennie Mary	Mass.	Lazowski, Jennie Helen	Va.
A.B. 1951, The George Washington University		Leathart, John William, Jr.	Mass.
LaTorre, Vincent Thomas	N.Y.	B.S. 1952, University of Pittsburgh	
Latta, Anna	N.Y.	Leach, Arthur Russell	Va.
Latta, James Clay, Jr.	Md.	Leach, Charles A.	
Laub, William John, Jr.	Ohio	B.S. 1950, Springfield College	
A.B. 1950, Yale University		Leahy, John Edward	Mich.
Laubinger, Frank Herbert	Md.	A.B. 1947, University of Notre Dame	
A.B. 1951, The George Washington University		Leahy, William Vincent Crahan	
Laubscher, Lawrence Edwin	Md.	A.B. 1944, University of Pennsylvania	
B.E.E. 1952, The George Washington University		A.M. 1950, The George Washington University	Md.
Lauder, Robert Bruce, Jr.	N.Y.	Leake, Helen Baker	D.C.
Lauderbach, B. Joy	Mass.	A.B. 1950, Marshall College	
B.S. 1950, Boston University		Leapley, William Trudgeon	
Laudor, Charles Richard	N.Y.	B.S. 1942, Western Michigan College of Education	D.C.
B.S. 1947, Purdue University		Lear, Janice Evelyn	
Laufer, Claire Lucille	D.C.		

Leard, Emil Watson A.B. 1910, Mercer University B.L. 1914, University of Georgia	D.C.	Leffingwell, Thomas Cullen A.B. 1952, The George Washington University	Pa.
Leard, James Curtis	D.C.	Lelkowitz, Saul B.S. 1946, College of the City of New York	N.Y.
Leary, John Patrick	Mass.	Lelofdt, Richard O'Leary A.B. 1930, Louisiana State University	Miss.
Leary, Patrick James A.B. 1948, University of Omaha	D.C.	Leltwich, Frances Walton D.C.	D.C.
Leatherbury, Irene Miller	D.C.	Legagnoux, Yves Andre A.B. 1952, The George Washington University	Va.
Leavitt, George Albert	N.Y.	Lehman, Alissa H. A.B. 1935, University of Cincinnati	Md.
Leavitt, Raymond Boomer B.S. 1925, U.S. Naval Academy	N.Y.	Lehman, John Henry, Jr. D.C.	D.C.
Leavy, Horace James A.B. 1952, The George Washington University	N.Y.	Lehman, Patricia Gray La.	Va.
Leavy, James Horace	D.C.	Leliedt, Robert Conrad D.C.	N.Y.
Lelch, Jeanette Marie	D.C.	Lelie, Richard Kans.	D.C.
Lelch, Joseph Lenol A.B. 1952, The George Washington University	D.C.	Lelkowitz, Robert Clinton, Sr. Lebest, Maryette A.B. 1952, Skidmore College	Conn.
Lelch, Raymond	S.D.	Leiby, Frederick B.S. 1951, Georgetown University	Va.
Lelch, Naula Marjorie	D.C.	Lelkovich, Henry James, Jr. B.F.E. 1948, The George Washington University	Pa.
Lelch, Robert Sterling	Md.	Lelkowitz, Roswitha Helena Germany	
Lelch, Joseph Roland B.S. 1948, University of Maine	Ill.	Lelch, Richard Robert N.J.	
Lelch, Donald Leon A.B. in Ed. 1944, The George Washington University	D.C.	Lelch, Carroll Irwin, Jr. B.S. 1958, Virginia Polytechnic Institute	Va.
Lelch, Julia Elizabeth A.B. in Ed. 1944, The George Washington University	Va.	Lelch, Theodore Hunton, Jr. B.S. 1945, University of Maryland	Va.
Lelch, John Edward	S.C.	Lelch, Joseph John B.S. 1941, Pennsylvania State College	Md.
Lelch, Pearl	Conn.	Lelch, Robert Henry Ind.	
Lelch, Eugene Edward	D.C.	Lelch, Mary Elizabeth N.Y.	
Lelch, Henry Albert	Wis.	Lelch, William Park, Jr. Va.	
Lelch, Maud Howard B.S. 1951, St. Norbert College	Va.	Lelch, Francis Theodore B.S. in Plan. 1951, The George Washington University	Va.
Lelch, Barbara Anne A.B. 1949, Immaculata College	D.C.	Lelch, Milton Samuel Md.	
Lelch, Benjamin Kaiman	Ill.	Lelchman, James Jacob B.S. 1951, Harvard School of Music	Kans.
Lelch, Charles	Calif.	Lelchman, Lee R., Jr. B.A. C.E. 1943, Kansas State College	Va.
Lelch, Charles Eugene A.B. 1918, University of California at Los Angeles	China	Lelchman, Mary A.B. 1952, The George Washington University	Pa.
Lelch, Hui Kit M.E. 1952, Ohio State University	D.C.	Lelch, Margaret Agathe Calif.	
Lelch, Helen	Calif.	Leon, Edward Walter A.B. 1951, Stanford University	Md.
Lelch, Henry Farrow A.B. 1920	Va.	Leonard, Barbara Ann Va.	
Lelch, John Brady A.B. 1952, Linwood	Md.	Leonard, Dorothy Anita Nebr.	
Lelch, LeRoy Linwood A.B. in Govt. 1948, A.M. in Govt. 1952, The George Washington University	D.C.	Leonard, Elizabeth Stuart A.B. 1948, Ohio Wesleyan University	Md.
Lelch, Murray Kent A.B. 1951, The George Washington University	Va.	Leonard, Fredric Adams B.S. 1941, M.S. 1948, University of Maine	Pa.
Lelch, Rex Hunt, Jr.	D.C.	Leonard, John Cameron Minn.	
Lelch, Renee Perle	D.C.	Leonard, John Henry, Jr. A.B. 1952, Manchester College	D.C.
Lelch, Shu Lam	D.C.	Leonard, John Houston A.B. 1952, Bowdoin College	N.J.
Lelch, Suk Bin	D.C.	Leonard, Lester Carpenter A.B. 1946, Washington and Lee University	D.C.
Lelch, Sun Min	D.C.	Leonard, Orel Klein A.B. 1940, The George Washington University	D.C.
Lelch, Gladys Gertrude A.B. 1952, Wells College	Va.	Leonard, Thomas Plin D.C.	
Lelch, Sarah Pamela	Md.		
Lelch, Wade Rixby	D.C.		
Leeman, Mary Cassibry	Md.		
Leese, Bernard McKenzie B.S. 1952, The George Washington University	Va.		
Leese, Marlon Louise	D.C.		
Leetch, Virginia Douglas	D.C.		
Lefferts, Miles Search	Va.		

Lepchinsky, Charles Richard	Pa.	Levy, Bert	D.C.
Lerch, Marilyn Anne	Ohio	B.S. 1952, Wilson Teachers College	Va.
Leresche, Louis Paul	Va.	Levy, Charles William	D.C.
Lerner, Esther B.	Md.	Levy, Charlotte Joan	D.C.
Lerner, Henry Robert	N.Y.	Levy, Joseph	D.C.
B.M.E. 1949, College of the City of New York		Levy, Leon	D.C.
Lerner, Lawrence Eli	D.C.	Levy, Lorraine Marlene	
Lesh, Barbara Ann	Va.	B.S. 1949, LL.B. 1952, American University	N.Y.
Leskowitz, Louis Emery	Va.	Levy, Paul Maurice	Va.
Leslie, George A.	Oreg.	Levy, Steven Everett	D.C.
B.S. 1934, Oregon State College		Lew, Jew Chuck	D.C.
M.Litt. 1951, University of Pittsburgh		Lew, Nann Chuck	D.C.
Lessin, Alan S.	D.C.	Lewenberg, Ilse	Md.
Lessin, Helen S.	D.C.	Lewis, Alice Elizabeth	D.C.
Lessuk, Gerald H.	N.Y.	Lewis, Barbara Ann	
LL.B. 1951, The George Washington University		A.B. 1952, Wellesley College	Va.
Lester, Edwin	N.Y.	Lewis, Benjamin, Jr.	Va.
B.E.E. 1949, Rensselaer Polytechnic Institute		A.B. 1941, University of Virginia	Va.
Lester, Melvin Arthur	Mont.	Lewis, Betty Jane	D.C.
A.B. 1952, Montana State University		Lewis, Blair	Va.
Lester, Robert Claude	D.C.	Lewis, David Andrew	Mass.
B.S.L., LL.B. 1951, University of Minnesota		Lewis, Eben Herbert	
Lestick, Augustus Peter	D.C.	A.B. 1941, Bowdoin College	D.C.
Lestrang, James Francis	Va.	LL.B. 1948, Syracuse University	
Letzkus, Donald Richard	Va.	Lewis, Edward, Jr.	
Leung, George Buck	D.C.	A.B. 1951, The George Washington University	Hawaii
Levan, Charles Winfield	Md.	Lewis, Ethelwynne Margaret	Va.
A.B. 1949, Franklin and Marshall College		A.B. 1952, New York University	Va.
A.M. 1950, University of Pennsylvania		Lewis, Fredericka Patterson	
LeVarn, Carol Maxine	D.C.	Lewis, Harvey Daniel	
Levasseur, Marcel Eugene Albert	Va.	A.B. 1954, Wofford College	
Leve, Gilbert Warren	N.Y.	A.M. 1958, University of South Carolina	Va.
A.B. 1950, University of Buffalo		Lewis, Jane Brown	D.C.
A.M. 1952, University of Texas		Lewis, Lunsford Harland	Va.
Leven, Ethel	R.I.	Lewis, Reba Floenor	Md.
Ph.B. 1928, Brown University		Lewis, Virginia Emerson	
Levenson, David Daniel	D.C.	A.B. 1935, Washington University	Md.
Levering, Elizabeth Burton	Va.	LL.B. 1941, The George Washington University	Va.
A.B. 1952, The George Washington University		Lewis, William	
Leverington, Richard Dean	Md.	Lewis, William Hubert	
Levin, Bernard T.	D.C.	A.B. in Govt. 1951, The George Washington University	Md.
Levin, Charlotte Ruth	D.C.	Leyshon, Webster Chadwick	Va.
Levin, Harold Arthur	Md.	Li, Louise Elizabeth	Md.
A.B. 1940, New York University		Liskos, Constantine John	D.C.
M.S. 1947, University of Denver		Libby, Edward Kelway	Va.
Levine, Allan Leonard	Ohio	A.B. 1951, Haverford College	
A.B. 1947, LL.B. 1949, Western Reserve University		Liberty, Cyril Jean	
Levine, Darlean Rose	D.C.	A.B. 1950, The George Washington University	W.Va.
Levine, Irving Seth	N.Y.	Lichiello, James John	
B.S. M.S. 1941, Massachusetts Institute of Technology		B.S. in M.E. 1951, West Virginia University	D.C.
Levinson, George Edward	Va.	Lidoff, Phyllis Lenora	N.Y.
Levinson, JoAnn	Md.	Linsky, Martin David	
Levinson, Joseph	Ill.	B.S. 1950, The George Washington University	Va.
B.S. in E.E. 1949, University of Illinois		Liebenau, Gerald Louis	Md.
Levinson, Lawrence Stanley	N.Y.	A.B. 1950, Yale University	D.C.
B.S. 1948, Rutgers University		Liebersohn, Bertha Reba	Md.
A.M. 1949, Columbia University		Lief, Joan Ellen	Md.
Levinson, Priscilla Levy	Md.	Liennau, Andrea Natale	W.Va.
A.B. 1948, Hunter College		Liepino, Rita Gundega	
Levitan, Eleanor Charlotte	Mass.	Light, Eber William, Jr.	D.C.
Leviston, Dan	D.C.	B.S. 1948, West Virginia University	N.Y.
Levitsky, Leon Robert	Pa.	Lichtman, Evelyn Rhea	
B.S. 1951, Muhlenberg College		Lightner, Calvin Newton	

Students Registered

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Likar, Winifred Elizabeth A.B. 1930, Indiana State Teachers College	D.C.	Litke, Arthur Ludwig B.S. 1940, Trinity College M.B.A. 1947, University of Pennsylvania	Conn.
Lilienthal, Virginia Ruth A.B. 1952, The George Washington University	D.C.	Litsky, Louis Little, Eleanor Grier A.B. 1949, Vassar College	Md. D.C.
Lilienthal, Ralph John Herman M.S. in M.E. 1950, Ph.D. 1952, Purdue University	D.C.	Little, Rex Beach B.S. 1952, U.S. Naval Academy	Md. D.C.
Lillard, Kathleen Fiechter A.B. 1949, The George Washington University	Va.	Little, Robert Paul Littlepage, Carolyn Cloy Littlepage, Ellen Frances Littlepage, John Marshall Littlewood, William Herbert B.S. 1948, University of Florida M.S. 1949, University of Michigan	D.C. D.C. Md. Md. D.C.
Lilly, Aaron Lycourus, Jr. Lilly, Horace Clinton Lima, Joseph B.S. 1950, American University A.M. 1951, The George Washington University	N.C. Va. Md.	Litton, Robert Clinton Liu, Rose Andrea Livesay, Edward Haywood Livingston, Gordon Kendall A.B. in Govt. 1951, The George Washington University	Va. D.C. Ky. Md.
Limerick, Patricia Dorothy B.S. 1947, University of Cincinnati	Ohio	Livingston, Thomas Richard	Va.
Linaweaver, Paul Glenwood A.B. 1951, Duke University	Va.	Lizdas, Anthony Lloyd, Albert Lawrence, Jr. A.B. 1951, The George Washington University	Md. Va.
Lince, James Delbert, Jr. Lincoln, Joyce Elizabeth B.S. 1954, University of Maryland	D.C. Md.	Lloyd, Benjamin Joseph, Jr. Lloyd, Eleanor Biddle Lloyd, Harry Joseph University Lloyd, Herman Bell A.B. 1950, Randolph Macon College	Md. Pa. D.C. Va.
Lind, Vincent Eugene Lind, William Edmund Lindamood, Barbara Ann Lindberg, Jenny May Linden, Betty Billingsley Linden, Robert Joseph Lindley, Clyde Ioe A.B. 1947, University of Missouri A.M. 1948, University of Iowa	Conn. D.C. D.C. Mass. Md. N.Y. Md.	Loan, Roy William Jr. Lobred, Janet Kasdon Lockaby, Joseph Rafe Lockwood, James C. Lockwood, Thornton Calf Lodato, Paul A. Loc, Myron L. A.B. 1951, The George Washington University	D.C. D.C. D.C. Md. Md. D.C.
Lindner, Thaddeus Alphonse A.B. in Govt. 1951, The George Washington University	N.Y.	Loebell, Jean Aramdur Loehler, Linda Jane Loesberg, Alan Sherwood B.S. 1950, Georgetown University	D.C. D.C. D.C.
Lindow, Fva Thompson Linseth, Clinton Oliver Linsley, Helen Webb Linsley, Henry Earl A.B. 1951, Texas Christian University	Va. N.D. Va. Texas	Loftmark, Walter Ruffe B.S. 1951, Tufts College Lofus, Joseph Philip, Jr. Loman, Anne Veronica Loran, David Benjamin Loran, Edward Northcott LL.B. 1948, University of Virginia Loran, Jerome H. Reed A.B. 1949, Yale University Lowe, Ruth B.S. 1941, Radcliffe College	Mass. Md. D.C. D.C. Fla. D.C. Okla.
Line, Oscar Austin A.B. 1950, University of Maryland	Md.	Lohman, George Wesley Lohr, Harry Paul Loucaas, Paul Herbert Lombardo, John Louis Lombardi, Stanley Thomas London, Arthur London, Eleanor Lorraine A.B. 1950, Indiana University	D.C. D.C. Md. Pa. D.C. Md. D.C.
Linn, Doroth Lord B.S. 1951, A.M. 1952, Wilson Teachers College	Va.	Long, Alexander Long, Billie Kerchie Long, Charles Whittington, Jr. Long, Elizabeth Ann Long, Nancy Catherine A.B. 1952, The George Washington University	D.C. D.C. Fla. Va. Md.
Linn, Joseph Wasland Link, James Douglas Link, Robert Wendell B.S. 1951, The George Washington University	Va. Ala. N.J.		
Linnert, Ann Marie Linton, Catherine A.B. 1950, Rutgers University	D.C. N.J.		
Lipschitz, Frank Joseph Lipp, Edward B.S. 1949, Temple University A.M. 1950, University of Pennsylvania	D.C. D.C.		
Lippert, Raymond Franklin B.M.E. 1949, The George Washington University	Md.		
Lippitt, Thomas Perry Lipson, Esther Liska, John Walter Liss, Emanuel Herbert B.S. 1949, Ohio State University Liss, George Lisson, Paul Francis	Md. Wis. D.C. Md. Ohio D.C. D.C.		

Long, Peggy Louise	Va.	Lowe, Robert Joseph	Va.
Long, Raymond Franklin	D.C.	Lowell, John Addison	Md.
Long, Thomas Albert	Va.	Lowenthal, Emil	D.C.
B.S. 1933, U.S. Naval Academy		Lowman, David Daniel	Va.
Long, Thomas Edward	Va.	Lowman, Eleanor Sather	Va.
A.B. in Govt. 1951, The George Washington University		Lowman, Martha Morton	Cal.
Long, Virginia Ann	D.C.	Lowman, Zelvin Don	
Long, William John	Ill.	A.B. 1943, Western State College of Colorado	D.C.
LL.B. 1926, Illinois Wesleyan University		Lowrey, Joe Jarman	
Longen, Francis John	S.D.	B.S. 1910, Mississippi College	
Longfellow, Don Woodward	Md.	A.M. 1922, George Peabody College for Teachers	Va.
A.B. 1950, The George Washington University		Lowther, Margaret Ann	D.C.
Longino, Laverne	D.C.	Lowther, Vernon Whitney	D.C.
A.B. 1950, Baylor University		Lubarsky, Naomi	D.C.
Longley, Frank Alan	N.Y.	Lubin, Bernard	
B.E.E. 1951, Cornell University		A.B. 1952, The George Washington University	D.C.
Longley, Marjorie Jo	Mo.	Lubin, Joseph Meyers	
Longstreet, Archie P.	N.J.	A.B. 1948, The George Washington University	Md.
Lonsdorf, James John	Pa.	Luboshez, Sergius N. Ferris	Ill.
B.S. 1950, University of Scranton		B.S. 1918, University of London	Pa.
Looker, Karen Earle	Va.	Lucas, Donald Edward	N.J.
Loomis, Paul A.	Pa.	Lucas, Raymond Albert	Md.
A.B. 1937, M.S. 1947, Temple University		Lucas, Saul Myron	
Loomis, Wilhelmina Tortike	Md.	Luciani, Stephanie M.	Va.
Looney, William Boyd	D.C.	A.B. 1917, Trinity College	Md.
M.D. 1948, Medical College of Virginia		Lucia, Willis Rudolph	Md.
Lopatin, Harriet	D.C.	Lucker, Joan Marguerite	
Lopes, James	D.C.	Luckett, Mary Frances	D.C.
A.B. in Govt. 1952, The George Washington University		A.B. 1911, St. Joseph College	Mich.
Lopez, Edison Rafael	Puerto Rico	Luckett, Thomas James	Mo.
Lopez, Fred	N.M.	Lucky, Howard Ewendon	
Lopez, Rosa	Cuba	Lucy, Robert Meredith	Va.
Lorditch, Minarose	D.C.	B.S. 1947, U.S. Naval Academy	Okla.
Loucks, Phyllis M.	W.Va.	Ludlow, Allen Dyer	N.J.
B.S. 1950, Ohio State University		Ludrick, John Alva	Wash.
Loudermilk, Ruth B.	D.C.	Ludwig, George Joseph	
Loudon, Dorothy Ann	Ohio	Lueck, Donald Christian	
B.S. 1951, Muskingum College		A.B. 1950, University of Notre Dame	Va.
Loughmiller, Clair Martin, Sr.	D.C.	A.M. 1951, University of Chicago	Ga.
Loughbridge, Harry Joseph	Va.	Luhtanen, Andrew Aatos	Va.
A.B. 1941, The George Washington University		Luke, Reid Stephen	Va.
Loughridge, Laura Kao	N.Y.	Lukens, Mary Ellen	D.C.
Love, James William	Pa.	Luka, Raymond Joseph	D.C.
Love, Richard Schuyler	N.Y.	Luley, Charles Edward	
A.B. 1947, University of Rochester		Lum, David Walker	N.J.
Love, Verner Richard	N.Y.	B.S. 1950, M.S. 1951, The George Washington University	
Lovell, Alfred Henry	Va.	Lumpkin, Pickert	Va.
A.B. 1918, University of Michigan		A.B. 1917, Wofford College	Mexico
A.M. 1919, Fletcher School of Law and Diplomacy		Lunsden, Buford Towle	Wis.
Lovell, Guy Wilmer	D.C.	Luna, Roberto Juarez	
Lovell, Nancy Jane	Va.	Lund, Robert Louis	Md.
Loveston, Lawrence Jennings	D.C.	A.B. 1940, Macalester College	
Loverud, Allen Kinsman	D.C.	Lund, Theodore J.	
A.B. 1951, Lawrence College		B.M.E. 1948, College of the City of New York	Va.
Lovett, John Allen	Pa.	Lundelius, Esther L'Ecluse	
A.B. 1952, Allegheny College		A.B. 1940, University of Southern California	Conn.
Lovett, Kenneth Edward	Ohio	Lundin, Carl Edward, Jr.	
Low, Richard Call	Calif.	B.S. 1938, Trinity College	
A.B. 1952, Brigham Young University		LL.B. 1942, University of Connecticut	Fla.
Low, Richard James	D.C.	Lundry, Lorell Elaine	Va.
Low, Robert Allen	N.Y.	Luning, Alfred Onno	Ohio
A.B. 1941, Stanford University		Lunn, Eugene Edward	
Lowe, Cameron Anderson	Va.	B.S. 1940, Youngstown College	
Lowe, Dorothy Ellen	Mich.		
Lowe, Franklin Gerald	D.C.		
Lowe, J. William	W.Va.		

Lunn, Ruth Martine Ed.B. 1936, Minnesota State Teachers College A.M. 1941, Northwestern College	D.C.	Macdonald, Elizabeth J.	Va.
Lusk, Harold Frederic		MacCracken, W. Lewis	Va.
Lutley, Wesley Robert		MacDonald, Mildred Vivian	Va.
Luther, Margaret Marie	D.C.	MacDonald, Roger Milo	Va.
Luthringer, Janet Irene	D.C.	MacDonald, Andrea May	D.C.
Lutwak, Helen Deborah	W.Va.	MacDonald, Andrew Thomas Alexander	Va.
A.B. 1948, A.M. in Ed. 1950, Hunter College	D.C.	MacDonald, Angus	Va.
Lutz, Herman William	Md.	MacDonald, Donald	Ohio
B.S. 1950, Virginia Polytechnic Institute		MacDonald, Frank Joseph	Va.
Lutz, Marie Terese		MacDonald, Katherine Marie	Md.
Lutz, Robert Blair	Va.	Macdonald, Mary M.	Md.
A.B. 1949, Dickinson College		A.B. 1949, Catholic University of America	N.Y.
Lyle, Ann Hardin	D.C.	MacDonald, Thomas Scott	N.Y.
Lyle, Robert Eugene	Pa.	B.M. in M.E. 1945, Rensselaer Polytechnic Institute	
A.B. 1950, The George Washington University		Macdonald, William Ruley	Del.
Lynch, Charles Theodore	Va.	B.S. 1913, U. S. Naval Academy	Va.
Lynch, Gerald Ross	Texas	Mace, Almon Turley	
Lynch, Marion Paull		B.S. 1934, M.S. 1936, Purdue University	Ohio
A.B. 1950, The George Washington University		Macintosh, George	Md.
Lynch, Ruth Bailey	Md.	MacFwen, Ellen Mae	D.C.
A.B. 1929, University of Grenada	D.C.	MacFalla, Lillian Fay	Md.
Lynch, Teresa Mary	D.C.	MacFaulstich, James Cunningham, Jr.	Va.
A.B. 1951, Dunbarton College of the Holy Cross		MacGill, Bruce James	D.C.
Lynn, Donald Carter	Miss.	MacGowan, Elizabeth Butler	
A.B. 1950, American University		A.B. 1952, The George Washington University	
Lynn, Leonore G.	D.C.	MacGregor, Morris John, Jr.	Md.
A.B. 1949, Randolph-Macon College		MacHle, Willard Frank	Fla.
Lynn, Thomas Noel	D.C.	A.B. 1950, Harvard University	
A.B. 1931, Lynchburg College	Va.	MacHlin, Jerome S.	Va.
A.M. 1942, Duke University		B.S.S. 1933, College of the City of New York	Va.
Lyne, J. Robert	D.C.	MacHlin, Leon G.	Md.
A.B. 1939, College of the City of New York		B.S. 1936, College of the City of New York	
A.M. 1943, New York University	Va.	MacK, Victor Anthony	Md.
Ph.D. 1952, American University		A.B. 1941, Brooklyn College	Md.
Lyons, Jane Elizabeth	Md.	MacKay, George Freeland	Ariz.
Lyons, John Hugh, Jr.	D.C.	A.B. 1938, Tufts College	
B.S. 1950, Virginia Military Institute		MacKenzie, Albert Hayes	Ill.
Lyons, John Joseph		LL.B. 1929, University of Pennsylvania	
A.B. 1949, Harvard University		MacKenzie, William J., Jr.	D.C.
Lyons, Lloyd Edward	Mass.	A.B. 1950, Lake Forest College	Va.
Lyons, Margaret Marie		MacKenzie, Curtis Lavine	
B.S. 1941, University of Maryland	D.C.	MacKinnon, Frederick Benjamin	
Lyons, Robert Edward	D.C.	A.B. 1942, University of Chicago	
B.S. in E.E. 1950, Massachusetts Institute of Technology		LL.B. 1948, Harvard University	
Lytle, John Albert	Va.	MacKintosh, Flora Leslie	Md.
Lytle, J. Warren	Md.	B.S. 1951, University of Maryland	N.C.
		MacKirdy, Lawrence Hamilton	
		B.S. 1948, University of North Carolina	
		MacLane, Patricia Glynn	Md.
		MacManus, Elizabeth Joyce	Va.
		A.B. 1948, Hollins College	
		MacManus, Joann	Va.
		A.B. 1951, Barnard College	Va.
		MacMaster, John Robert	N.J.
		A.B. 1951, St. Bonaventure University	Md.
		MacMillan, William Joseph	
		MacNeely, Charles Edward	
		B.S. 1941, Ohio State University	
		MacNeil, Joseph Hector	Va.
		Macomber, Jean Chalmers	R.I.
		A.B. 1951, Providence Bible Institute	
		Mason, Robert Carpenter	D.C.
		Mavrotan, Aphrodite	D.C.
		Mazo, Giuseppe	Va.
		B.S. 1941, U. S. Naval Academy	
		MacSporran, John Samuel	Md.
		A.B. 1945, Yale University	N.Y.
		Macumber, Donald Lorn	
		A.B. 1950, St. Lawrence University	
		Macvean, Margaret Lydia	W.Va.
		A.B. 1942, Davis and Elkins College	

M

Maasen, Wallace			
Maabry, Carol Joan			
MacArthur, Beatrice Ashmead	D.C.		
LL.B. 1915, National University Law School	D.C.		
MacAulay, Robert Joseph, Jr.	Md.		
A.B. 1952, Georgetown University	Cuba		
Macaulay, Rose Galloway			
A.B. 1950, Johns Hopkins University	Md.		
Macbeth, William Benson	Md.		
A.B. 1948, Duke University			

Madaris, John De, Jr.	Va.	Mamer, Louisan Elizabeth	Ill.
Madden, Howard Lowell	Iowa	A.B. 1931, University of Illinois	W. Va.
Maddox, Anna Louise	Md.	Mamish, Julia	Wyo.
Maddox, Jeanetta White	D.C.	Manatos, Mike N.	Ind.
Maddox, Lawrence Lee	Md.	Manbeck, James Nelson	Pa.
Maddox, Richard Irving	Oreg.	Manbeck, Harry Frederick, Jr.	D.C.
B.S. 1951, U. S. Naval Academy,		B.S. in E.E. 1949, Lehigh University	D.C.
M.S. 1943, California Institute of Technology		Mancuso, Angela	D.C.
Maddox, Ronald Paul	D.C.	Mancuso, Rosalie Marie	Va.
A.B. 1952, Swarthmore College		Mandariach, Stevan	D.C.
Mader, George Franklin	Va.	B.S. 1945, U. S. Naval Academy	D.C.
A.B. 1952, University of Richmond		Mandelbaum, Elias Aron	W. Va.
Madigan, Joan Elizabeth	Md.	Manes, Louis Jean	D.C.
Madisen, Beverly Elizabeth	D.C.	Mangano, Philip Austin	
Madisen, Andrew Calvin	Va.	A.B. 1942, Yale University	Va.
Madsen, Ronald Earl	Utah	A.M. 1944, Rochester University	N.Y.
B.S. 1952, Brigham Young University		Maneralanda, John King	
Makee, Robert Henry	Va.	Mangold, Robert John	
A.B. 1951, The George Washington		A.B. in Ed. 1951, The George Washington	
University		University	
Magleby, Dale Hanmer	Idaho	Mangum, Joan Alicia	
B.S. 1948, A.B. 1949, Idaho State College		Mangum, Robert Boyd	
Magnier, Joseph Paul	D.C.	Mangus, Floyd Frank	
Magnone, Joseph Samuel	Va.	Manian, Joan Martha	
B.S. 1951, Pennsylvania State Teachers		Maniatis, Ileana Chrysantho	
College, Indiana		Manikkalingam, Kanthiah	
Magow, Edward Malcolm	Va.	B.S. 1948, University of Ceylon	
B.S. 1951, The George Washington University		Manka, John	
Maguire, Sue Darby	D.C.	Mankous, Irene Marta	
Mahaney, Michael James, Jr.	Md.	Mantley, Albert	
Mahoney, Robert Cornelius	Mich.	Mann, Charles Kenneth	
B.S. 1952, Michigan State College		B.S.E. 1950, The George Washington	
Maher, Polly Ann	D.C.	University	
Mahn, Robert Ronald	D.C.	Mann, Clyde Robinson	
Mahon, Robert V.	N.Y.	B.S. 1947, East Carolina Teachers College	
A.B. 1950, LL.B. 1952, Columbia University		Mann, Eva Myrtle	
Maida, Stewart Anthony	Md.	B.E. 1929, Asheville Normal and Teachers	
Maienthal, Ellen June	D.C.	College	
B.S. 1950, Millikin University		Mann, Leah Frances	
Maiseh, Ormand Russell	Texas	Mann, Nancy	
Mazel, George Seymour	Pa.	Mann, Ruth E.	
A.B. 1949, Bucknell University		Mann, Vera Williams	
Mazandwal, Mohammad Hashim	D.C.	A.B. 1941, Texas Christian University	
Mayerke, Daniel Harold	D.C.	Manning, B.H.S.	
Mayers, Gary Hunter	Md.	B.S. in Ed. 1947, Northeast Missouri State	
Malaga, Joseph Frank	Va.	Teachers College	
Malanowski, Anthony Joseph	Pa.	Manning, Ellis Wooster, Jr.	
B.S. 1951, California Institute of Technology		A.B. 1949, St. John's College	
Malboeuf, Alfred Charles	Calif.	LL.B. 1952, Yale University Law School	
A.B. 1943, University of California		Manning, James F. Howard	
Malchman, Jenny L.	N.Y.	Manning, James Stuart	
A.B. 1947, Smith College		Manning, John Raymond	
Males, Edward Lee	Md.	Manning, Louis Marcello	
B.S. 1946, University of Illinois		Manning, Marion Carlos	
Malhmoed, Arnold Irwin	Md.	Manning, Samuel Phillips	
Malinas, Steve Alexander	S.C.	A.B. 1949, University of North Carolina	
Maling, Harriet Florence	Md.	Manning, Walter	
A.B. 1940, Goucher College		A.B. 1950, Wesleyan University	
A.M. 1941, Ph.D. 1944, Radcliffe College		M.S. 1952, Columbia University	
Malison, Robert	D.C.	Mano, Kvuma	
Malison, Irving Herschel	Va.	Manoff, Chester	
Malkan, Jack	D.C.	Manolatos, Alice Hope	
Mallgrave, William John	Pa.	Manolatos, Spiro George	
Mallios, Dimitri Peter	D.C.	Manbridge, Fred H.	
Mallios, George Peter	D.C.	Manser, Donald Ellsworth, Jr.	
Maloch, Nelle	Tenn.	Mansfield, Brook Stockman	
Malone, Donald Francis	R.I.	B.S. 1910, U. S. Naval Academy	
Malone, John Francis, Jr.	Pa.	Mansfield, Jack P.	
Maloney, Edward	D.C.	Mansfield, William Joseph	
Maloney, James Edward	D.C.	Mansour, Elbert Clement	
Malowski, Mary Marguerite	Mich.	Mansuet, James Ernest	
Malshy, Mary Leach	Va.	A.B. 1948, Shepherd College	
Malzone, Francis Richard	D.C.		

Students Registered

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McIntosh, Elmond Richard	D.C.	Marquis, James Ralph	N.J.
Manzano, Theodore	D.C.	A.B. 1942, Carleton College	
A.B. 1947, University of Texas		Masquos, John William	N.J.
Mapes, Eleanor Hermine	Va.	A.B. 1938, Carleton College	
Maphia, Forrester	Md.	Marr, Elizabeth Gee	Va.
A.B. 1950, Dartmouth College		B.S. 1949, Cornell University	
Maraphia, John Miley	Md.	Matta, Joseph Charles	D.C.
Maraney, John Vincent	Pa.	Martero, Robert	D.C.
Maravalli, Eugenia Rose	Pa.	Marsh, Benjamin Franklin	Ohio
A.B. 1952, The George Washington University		A.B. 1951, Ohio Wesleyan University	
Marxiani, Joyce May	Pa.	Majsh, Ernest Victor	Va.
Marcano, Vicente	Puerto Rico	Mash, Mary Henry	N.J.
B.S. 1949, University of Puerto Rico		Mash, Samuel Dennis	Md.
Marcella, Lawrence Charles	Pa.	A.B. 1948, Yale University	
B.S. 1951, Pennsylvania State College		A.M. 1950, Graduate Institute of International Studies, Geneva	
March, Joseph Wolf, Jr.	D.C.	Marsh, Watson William	Md.
Marchesano, Joseph Michael	N.J.	A.B. 1941, Wittenberg College	
Marchi, Louis Basil	D.C.	Marshall, Andre	Va.
Marchien, Andrew	N.J.	Marshall, Barton Atlee	Md.
B.S. 1950, Georgetown University		B.S. 1951, University of Maryland	
Marciak, Edward S.	D.C.	Marshall, Frank Stradden, Jr.	Va.
Ph. G. 1924, University of Maryland		Marshall, Howard Lee	Iowa
Marchec, Stanley Andrew	Md.	Marshall, John Milton	Md.
Marlotte, Theresa Marie	Md.	Marshall, Madeline Swindell	Va.
Marcou, Helen Eilene	Pa.	Marshall, Mildred Maxine	Fla.
Marcovitz, Ruth	D.C.	Marshall, Ruth	D.C.
Marouse, Ernest	N.Y.	Marlock, James Russell	Va.
A.B. 1950, The George Washington University		Marteller, Mary Rivers	Va.
Mardrea, Melvin Randolph	Md.	Martin, Alice M. J.	Puerto Rico
Mare, Mary Foust	Va.	B.S. 1950, M.B.A. 1940, University of Pennsylvania	
A.B. 1927, A.M. 1928, Bucknell University		Martin, Buddy Mark	Va.
Marlut, Harry	Ohio	Martin, Daniel Walter	Md.
Margolis, Matthew Donald	N.Y.	Martin, Donald Robert	Colo.
Margolis, Robert	D.C.	Martin, Dore	Md.
LL.B. 1948, University of Pennsylvania		Martin, Fay Emmett	D.C.
Marines, Harvey	D.C.	Martin, James Tolson	Md.
A.B. 1951, University of Maryland	D.C.	Martin, James E. Jene, Jr.	D.C.
Marx, Elaine Bresler		Martin, Harry Robert	D.C.
Marx, James Vincent	Va.	A.B. 1946, University of Puerto Rico	
Mark, Ann	Pa.	Martin, James Kenneth	N.J.
Markel, Erich Hans	Va.	B.S. 1947, U.S. Naval Academy	
J.D. 1951, Friedrich-Alexander University, Erlangen, Germany		Martin, Jessie Bayelow	D.C.
Markham, Wayne Dungan	Pa.	A.B. 1947, Connecticut College	
Markland, Jane Bordley	Md.	Martin, John Oliver	Va.
Marks, Annie Laurie	Va.	A.B. 1941, Washington and Lee University	
Marks, Morris	Md.	Martin, John Peter	Md.
Marks, Walter	D.C.	A.B. 1952, The George Washington University	
Markwood, Carl Christopher	Pa.	Martin, James Carpenter III	D.C.
B.S. 1945, St. Vincent College		Martin, Lawrence Stephen	Va.
Markwood, Juliet	D.C.	Martin, Mary Lee	Va.
Martin, Dorothy Helen	Md.	Martin, Mary McLean	Md.
Martin, John Marshall	Pa.	Martin, Mildred Jean	Md.
Marlow, Charles Austin, Jr.	Calif.	Martin, Paul Kuter	D.C.
Marlow, Howard Waring	Md.	Martin, Philip Joseph	N.Y.
A.B. 1950, The George Washington University		Martin, Richard Owen	Va.
Marlow, William Haworth	Md.	Martin, Robert Carl	Calif.
Matur, Emil	D.C.	A.B. 1950, University of California	
Marocchi, Alfred Charles	N.Y.	Martin, Roger Arthur	Md.
Marocchi, John Lewis	Va.	Martin, Sheila	D.C.
B.S. 1941, U.S. Naval Academy		Martin, Warren Keith Gilbert	D.C.
Maron, Jacqueline Fleurette	Va.	Martin, Walt Nicholas	N.C.
B.S. in B.A. 1952, Kent State University	Ohio	LL.B. 1950, A.B. 1952, The George Washington University	
Marques, Mary Gilda	D.C.	Martin, William Beckley	Va.
B.S. Ed. 1941, Massachusetts State Teachers College	Mass.	A.B. 1950, Lynchburg College	
M.B.A. 1942, Boston University		Martorano, Joseph James	D.C.
Marquez, Peter	Venezuela	A.B. 1940, Brooklyn College	
		M.S. 1944, New York University	
		Martowicz, Edward Thomas	Ohio

Martz, David Joshua	D.C.	Matacia, Florence	Va
B.S. 1942, Pennsylvania State College		Mate, Frank, Jr.	N.J.
Martz, Ruth Marie	D.C.	A.B. 1952, Dartmouth College	Va
Marvel, Jerry Wendell	Ind.	Matejka, John Charles	D.C.
Marvey, Adolph Louis	Va.	B.S.C. 1952, St. Louis University	
Marvin, Ruth Janet	D.C.	Mather, Louis Kenneth	Va
A.B. 1948, University of Nebraska		B.S. 1945, University of London	
Marx, James Frances	D.C.	Mathers, Alex Picken	
Machauer, Ruth Doloris	Md.	B.S. 1931, University of Florida	Va
Mascarella, Joseph Robert	N.Y.	M.S. 1946, Tulane University	D.C.
Mase, Vito	Conn.	Mathers, Lala Wanda	D.C.
Mash, Morris	N.Y.	Mathews, Cynthia Anne	D.C.
A.B. 1952, The George Washington		Mathews, Richard Lawrence	N.C.
University		Mathis, Irving	
Maskaleris, Eva Chris	Okl.	Mathis, Troy Davis	D.C.
Mason, Abe Morris	D.C.	B.S. 1949, University of North Carolina	Va
Mason, Clayton Dietz	N.Y.	Mathur, Krishen Dayal	D.C.
A.B. 1942, The George Washington		Maton, Gilbert Louis	Va
University		Matthes, Chester Anthony	Va
Mason, Edward Gay	Conn.	Matthews, Donald Miller	D.C.
B.B. 1926, Yale University		Matthews, Fred George	D.C.
Mason, Frances	D.C.	Matthews, James Raymond	Va
A.B. 1946, Kansas City University		Matthews, James Richard	
Mason, Harry Wesley	D.C.	A.B. 1948, University of Richmond	Md
B.S. 1951, American University		Matthews, Malcolm John	Va
Mason, Jimmie	D.C.	A.B. 1951, University of North Carolina	
Mason, John Stuart	Md.	Matthews, Patrick Cabell	Va
Mason, Katharine Natalie	Va.	B.S. 1931, University of Virginia	W Va
B.S. in Ed. 1946, Madison College		Matthews, Samuel Sheridan	
Mason, Kenneth Norman	D.C.	Matthews, Theodore Dalmas, Sr.	Va
A.B. 1952, Lynchburg College		A.B. 1946, Shepherd College	Conn
Mason, Lavers J.	W Va.	Matthews, Walter Thomas	Md
Mason, Lyman Gates	D.C.	Mattinelly, Judith Ann	Ind
Mason, Mary Crow	S.C.	Mattinelly, Mary Benedicta	
A.B. 1921, Winthrop College		Mattot, John Edward	Va
A.M. 1929, University of South Carolina		B.S. in E.E. 1950, Purdue University	
Mason, Mary Ruth	D.C.	Mattson, Melvin Earl	N.J.
Mason, Norman Randolph, Jr.	Va.	B.S. 1946, U.S. Merchant Marine Academy	Pa
Mason, Peggy	N.C.	Mattucci, Robert John	N.Y.
Mason, Raymond Edmund, Jr.	Pa.	Mattusie, Frank H.	
A.B. 1951, LaSalle College		Mauer, Floyd Andrew	
Mason, Robert Marion	Ohio	B.S. 1942, Hobart College	Va
Ed B. 1950, A.M. 1951, Tulane University		M.S. 1949, Carnegie Institute of Technology	Pa
Mason, Yvonne Lori	Wis.	Maughan, Virginia Monroe	D.C.
A.B. 1952, Mc Murray College for Women		Mawler, George George	Calif
Massa, Charlotte F.	D.C.	Maupin, George Elaine	
Massa, Simon	N.Y.	Maupin, James Carey	
Massengill, Hilda Grey	N.C.	A.B. 1951, The George Washington	D.C.
Massengill, Sam William, Jr.	Tenn.	University	D.C.
B.S. 1953, University of Tennessee		Maus, Ida May	Va
Masser, Charlotte Hooper	D.C.	Mavridis, Photios Adam	D.C.
Masser, Iris Entwistle	D.C.	Mawhood, Samuel Allen	
A.B. 1925, Wharton College		Maxson, Cleo Mae	Ind
Masser, James Edward	D.C.	A.B. 1952, Salem College	
Masser, Maxine	Mo.	Maxwell, Robert Alan	N.J.
Massie, Selma Duke	Va.	A.B. 1948, Indiana University	
A.B. 1947, Madison College		Maxwell, William Abraham	Pa
Massie, Shirley Ann	Va.	B.S. 1950, University of Pennsylvania	Va
Mass, Phillip Wynn	D.C.	May, Jacqueline Lee	
Masters, Helen Crystal	Ky.	May, Jover	Md
A.B. 1952, University of Kentucky		A.B. 1949, University of Tennessee	D.C.
Masters, Margaret Ann	Pa.	Mayberry, Grant Elmer	D.C.
A.B. 1951, The George Washington		Maybud, Sid Ahmed	D.C.
University		Mayer, Matilda J.	
Masters, Robert F.	Ind.	Mayer, Robert Charles	
B.S. 1957, LL.B. 1959, Indiana		B.S. 1944, U.S. Merchant Marine Academy	Ala
University		B.S. 1948, Georgetown University	Puerto Rico
Matterson, Francis Wilbur	Mont.	Mayer, Susan Ann	
A.B. 1950, The George Washington		Mavmi, Protasio	Va
University		A.B. 1950, The George Washington	D.C.
Mastrantonis, Constantine Leonidas	D.C.	University	
Mata, Mary Ellen T.	N.Y.	Maynard, James Paul	
		Mayo, David Wallace	

Mayo, Harold Emmett	Va.	McCleskey, Curtis Victor	Miss.
Mayo, Rose Mary	D.C.	McCloskey, Enoch John	Pa.
Mayolo, Frank Louis	Fla.	A.B. 1953, Pennsylvania State College	
Mayosky, Joseph Frank	N.Y.	McClung, Harry Byron	Va.
Mayo-Wells, Wilfred James	D.C.	McClure, Birthel Eugene	D.C.
B.E.E. 1952, The George Washington University		McClure, Evelyn Josephine	D.C.
Mazeika, Benjamin	Md.	McClure, Robert Lee	Texas
B.S. 1950, University of New Hampshire		McClure, William Pendleton	D.C.
Mazenderani, Abraham Khajavi	D.C.	B.S. 1949, University of Pennsylvania	
B.C.E. 1940, The George Washington University		McCoach, Nancy Ann	D.C.
Mazero, John Robert	Pa.	McCoart, James John	Va.
A.B. 1950, The George Washington University		McCombs, Katherine Loree	D.C.
Mazza, Louis Francis	Md.	McConachie, Gale Root	Kans.
McAfee, Ruth Edith	D.C.	McConnell, George Jewell	D.C.
McAle, Elsie Wootten	Mo.	McConnell, Lyle Thornton	Tenn.
A.B. 1949, Goucher College		A.B. 1950, University of the South	
McAnelly, Shelton Bigler	Va.	McCord, William Neal, Jr.	D.C.
B.S. 1942, Louisiana State University		A.B. 1952, University of North Carolina	
McAfee, Thomas Joseph	N.J.	McCormack, George Robertson	Md.
McAhl, Rita Catherine	D.C.	McCormack, Jean Marie	Mass.
A.B. 1942, Trinity College		A.B. 1948, Emmanuel College	
McAuliffe, Clinton Earl	Nebr.	McCormick, David Clement	La.
B.S. 1952, U. S. Coast Guard Academy		B.Mus. 1951, Southeastern Louisiana College	
M.S. 1950, Massachusetts Institute of Technology		M. Mus. 1952, Northwestern University	
McAvoy, Nelson	Va.	McCormick, Paul Vincent	N.Y.
B.S. 1952, Furmont State College		McCormick, William Edward	D.C.
McCabe, John Terence	Pa.	L.L.B. 1951, Washington University	
McCarthy, George Matthew	D.C.	McCormick, William John	Va.
McCall, Barbara Ann	Ky.	McCoskey, Robert Edgar	D.C.
McCall, Carl Price	N.C.	B.S. 1950, The George Washington University	
McCall, Carol Noonan	Md.	McCowan, Joseph Aaron	Utah
McCall, Chester Hayden, Jr.	Md.	B.S. 1949, Utah State College	
A.B. 1950, A.M. 1952, The George Washington University		McCoy, Albert Dod	Va.
McCall, Mary Louise	D.C.	A.B. 1943, Princeton University	
B.S. 1950, Wilson Teachers College		A.B. 1946, Stanford University	
McCallum, George Patrick	D.C.	McCoy, Charles France	D.C.
A.B. 1944, A.M. 1948, Washington State Normal School		McCoy, Donald Edward	Ind.
McCance, Bobbie Evelyn	D.C.	B.S. in M.E. 1950, Purdue University	
McCann, Brendan James	Va.	McCoy, Gene Edward	W.Va.
McCarten, William Gray	Md.	B.S. in E.M. 1950, West Virginia University	
H.S. 1945, University of New Hampshire		McCoy, James Victor	Wash.
M.S. 1940, The George Washington University		B.S. 1952, Washington State College	
McCarthy, Helen Mary	Mass.	McCoy, Richard M.	Va.
A.B. 1942, Regis College		McCracken, Dora Bradshaw	Va.
McCarthy, Isabella Ann	D.C.	McCracken Kelly Thomas	Va.
McCarthy, John Ernest	Md.	McCrary, Korene Lillie	N.C.
McCarthy, John Robert	Ohio	McCreery, Arlene Virginia	Va.
McCarthy, Lawrence Daniel	Va.	B.S. 1945, Mary Washington College	
McCarthy, Maria Carmen	D.C.	McCreight, Charles Edward	D.C.
McCarthy, Mary Ann	D.C.	B.S. 1949, M.S. 1950, The George Washington University	
McCarthy, Mary Rita	D.	McCrillis, Avis Ruth	N.H.
McCarthy, Matthew Joseph	Va.	B.Mus. 1948, University of Michigan	
L.B. 1949, St. John's University, N.Y.		M.S. 1951, Simmons College	
McCarthy, Claudia Ann	D.C.	McCrone, Thomas Joseph	Pa.
McCarthy, Julius Acee	D.C.	McCubbin, James Melvin	D.C.
McCarthy, Clinton Gordon	Ala.	McCue, Francis Joseph	Va.
McCarthy, Gerald Joseph	Mass.	A.B. 1940, Fordham University	
A.B. 1951, Boston College		A.M. 1950, New York University	
McClaren, Mary Therese	Mass.	McCue, John Joseph	N.Y.
B.S. 1944, U. S. Naval Academy		B.S. 1950, Fordham University	
McClary, Earl Arthur	D.C.	McCullough, Edward William	D.C.
McClan, William Alfred	Md.	McCullough, James Matthew	Va.
McClanland, William Thomas	Md.	B.S. 1951, M.S. 1952, Pennsylvania State College	
McClennahan, Nell Louise	Pa.	McCullough, John Charles	Fla.
		McCullough, Richard Cornwall	Md.
		McCully, Cyrus Harold	Va.
		A.B. 1954, A.M. 1956, Colorado State College of Education	

McCune, Frederick Kenneth	Pa.	McGee, Kathleen Dillon	Va.
B.S. 1951, Grove City College		McGee, Robert Phillip	Va.
McCurry, William Smith, Jr.	Md.	B.S. 1950, Virginia Polytechnic Institute	Del.
B.S. 1948, University of South Carolina		McGeehan, Hugh Vincent	D.C.
McCutcheon, Martha Gladys	D.C.	McGeehan, Leo Edward	
McCutcheon, Robert Daniel	W. Va.	B.S. 1949, Providence College	N.Y.
McDaniel, Carl Herman	Ohio	McGill, James Patrick	N.Y.
B.S. 1950, Ohio University		McGinnis, Anne Cecile	N.Y.
McDaniel, Clarence Edward	Ark.	McGinnis, Dwight Ridgway	Va.
McDaniel, Elizabeth Ripley	D.C.	McGinnis, Norman Francis, Jr.	Va.
McDaniels, Percy Gordon, Jr.	Md.	McGinnis, James Thomas	D.C.
B.S. 1941, West Virginia Institute of Technology		McGogney, Charles Harold	D.C.
McDavitt, Margaret Louise	D.C.	B.S. 1949, University of Maryland	Md.
McDermott, Carol Jean	D.C.	McGohrick, Isabel Joan	
McDermott, Delia Ethel	Va.	McGonagle, William E.	
McDermott, William Thomas	Va.	A.B. 1939, Holy Cross College	Va.
B.S. 1935, University of New Hampshire		McGonigle, Catherine Ann	D.C.
Ed. M. 1936, Boston University		McGough, Thomas Francis	N.Y.
McDonald, Arthur Smith	Md.	McGowan, John Worden, Jr.	Va.
A.B. 1949, University of Kansas		McGowan, Joseph Charles	Pa.
A.M. 1950, Cornell University		B.S. 1949, Pennsylvania State College	Md.
McDonald, Ethel Raynor	Va.	McGowan, Michael Paul	D.C.
A.B. 1939, University of Hawaii		McGrath, Bernice Anne	N.Y.
McDonald, James Hugh	Va.	McGrath, George Edward, Jr.	Md.
McDonald, James Robert	D.C.	McGrath, Mabel Leahy	Va.
McDonald, John Warlick	Va.	McGrath, Robert Vincent	
B.S. 1915, University of Kentucky		McGraw, Doonan Dwight	
McDonald, Marvin Bruce	Md.	B.M.E. 1948, Georgia Institute of Technology	Md.
McDonald, Ronald Fisher, Jr.	Md.	McGraw, Forrest Ross	Va.
McDonald, William Edward	Pa.	McGraw, Paul Edward	
A.B. 1949, University of Pittsburgh		LL.B. 1941, Columbus University	Md.
McDonald, William Franklin	Md.	McGraw, Richard Thomas, Jr.	Ark.
McDonnell, Donald Anthony	D.C.	McGregor, John Gregor, Jr.	D.C.
McDonnell, Ellen E.	D.C.	A.B. 1940, Stanford University	
McDonnell, James John	Md.	McGregor, Rubroy	Pa.
McDonnell, Mary Elizabeth	Mass.	A.B. 1920, U. S. Naval Academy	Va.
A.B. 1947, Wellesley College		McGregor, Wallace H.	
A.M. 1948, Columbia University		McGrew, Clinton Jackson, Jr.	
McDonough, Donald Coleman	Wash.	A.B. 1922, The George Washington University	Pa.
B.S. 1950, University of Minnesota		McGuire, Charles Francis	N.Y.
McDonough, John James	Mass.	McGuire, Henry	D.C.
B.S. 1950, Boston College		McGuire, Jack Dean	Va.
McDonough, John Joseph	N.Y.	McGuire, James Arthur	D.C.
McDonough, Madeline Agnes	D.C.	McGuire, Kenneth James	Mass.
McDonough, Raymond John	N.Y.	McGuire, Janet Emerson	Pa.
LL.B. 1951, The George Washington University		McGurl, Vincent William	
McDonough, Rita Sarah	Mass.	A.B. 1921, The George Washington University	Pa.
McDougall, Marie Rieter	Md.		Va.
McDowell, Janet Beverly	Md.	McHale, Joan V.	
A.B. 1950, A.M. 1952, The George Washington University		McHale, Robert Berger	
McElroy, Robert Lee, Jr.	Tenn.	A.B. 1951, The George Washington University	D.C.
B.S. 1945, U. S. Naval Academy		McHan, Thomas Freeman	D.C.
McEnroe, Timothy Dana	Md.	McHenry, William Parke, Jr.	Va.
McEwen, Marilou	D.C.	Mellhatten, David White	
McFadden Joseph John	Md.	A.B. 1952, The George Washington University	D.C.
B.S. 1948, University of Scranton		Mellree, Dorothy Louise	Md.
McFadden, Merrill Ray	D.C.	McInerney, John Stuart	Ark.
McFarland, David Willis	Calif.	McInnis, James Milton	D.C.
A.B. 1942, University of California at Los Angeles		McIntee, Rachel Catharine	Md.
McFarland, Thomas Orrin	Va.	B.S. 1942, Columbia University	
McFolin, Roy Lee	D.C.	McIntire, Ralph Wellington, Jr.	N.C.
McGandy, Edward Lewis	Md.	B.S. 1949, University of Pittsburgh	
B.S. in Eng. 1951, The George Washington University		McIntosh, Arthur Talmadge	Mass.
McGarvey, Paul Jerome	D.C.	A.B. 1948, University of North Carolina	Mo.
McGaushey, Velma Louise	Ky.	McIntosh, Gail Marie	N.C.
McGee, Charles Edward	Md.	McIntosh, Sonia Sue	Md.
B.E. 1914, Northern Illinois State Teachers College		McIntyre, Carl Franklin	
		McIntyre, Francis Joseph	

Students Registered

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McIntyre, James Byron A.B. 1951, Morris Harvey College	W.Va.	McLeod, Florence Clarissa A.B. 1950, University of Maryland	Va.
McIntyre, Joseph Charles B.S. 1949, M.S. 1952, Georgetown University	N.Y.	B.S. 1947, Simmons College	Va.
Mcivor, Thomas Aloysius A.B. 1947, LL.B. 1949, University of Pennsylvania	Pa.	McLeod, Gerald Alan McLeod, Jean Frances McLennon, Franklin Dean B.S. 1952, The George Washington University	Va. Md. Va.
McKay, Olive Jean A.B. 1924, Montana State University	D.C.	McLendon, John Robert, Jr. McLester, Thomas Francis McLucas, Rebecca Louise McLynn, Dorothea Jones McLynn, James Michael A.B. 1950, The George Washington University	D.C. D.C. Mass. Md. D.C.
McKee, Marion McKee, James Earl McKee, James Oakes A.B. 1942, Knox College	D.C. D.C. Tenn. Ill.	McMahon, Helen Mae McMahon, Mark Lawrence, Jr. McMahon, William Thomas A.B. 1949, Syracuse University	Ohio D.C. N.Y.
McKee, Nancy Catherine McKee, Richard Neal McKelipott, Carol	Va. La. Ill.	McMannus, Reginald Paul A.B. 1952, Bowdoin College	Maine
McKenna, Gerard Edward McKenzie, Bonnie Woodbury McKenzie, Donald Keith McKenzie, Mattie Maye	Md. Va. D.C. D.C.	McMeel, John Wallace A.B. 1950, The George Washington University	Md.
McKeon, Alfred Jerome A.B. 1949, The George Washington University	Va.	McMillan, Todd James A.B. 1951, Ohio State University	Ohio
McKowan, Edmond Frank, Jr. McKown, Thomas Patrick A.B. 1950, The George Washington University	D.C. Mass. Mass.	McMillan, William Arthur B.S. 1951, University of Maryland	Md.
McKinney, Betty Jane McKinney, Clyde Livingston McKinney, Garland Young, Jr. B.S. 1952, University of Oklahoma	Md. W.Va. Okla.	McMillan, William Walter McMullen, John Hubert IV McMullen, Alexander Ross McMullen, Raymond Fredric McMurray, Delzell Ruthell McNally, Eileen Boulder McNamara, Joseph Patrick LL.B. 1951, University of Buffalo	Va. Tenn. N.Y. Md. Va. D.C. N.Y.
McKinney, Katherine M. A.B. 1952, Smith College	W.Va. Pa.	McNamara, Richard Vaughan McNamee, Gilbert Wilson McNamee, William Edward McNeal, Martha Deane McNeese, Harold Graham B.S. in F.S. 1950, Georgetown University	Iowa D.C. Md. Va. Calif.
McKinney, Martha Haynes A.B. 1950, Furman University	S.C.	McNeil, Donald Eugene A.B. 1950, A.M. 1951, University of Michigan	Mich.
McKinney, Nan Honora Katherine McKinney, Wade James C.F. 1951, University of Maryland	Va. D.C. Md.	McNeill, Elizabeth Louise McNeill, William David, Jr. McNelis, James Ralph McNey, Patricia Ann McNulty, Edward Leonard A.B. 1949, M.S. 1951, University of Colorado	D.C. S.C. W.Va. D.C. Va.
McKnight, William Ralph B.S. 1950, Pennsylvania State College	Kv. Md.	McNulty, Philip Lambert McPeak, Charles John A.B. 1950, St. John's University	Iowa N.Y.
McKnight, Robert Don B.S. in M.E. 1950, University of Notre Dame	D.C.	McPhail, Angus A.B. 1951, Western Illinois State Teachers College A.M. 1956, State University of Iowa	D.C.
McLane, Eleanor Cecelia McLane, Henry Earl, Jr. McLaughlin, Robert John McLaughlin, Elizabeth Jane McLaughlin, James Joseph McLaughlin, Martin Joseph McLaughlin, Mary MacMillan B.S. in B.E. 1951, University of Maryland	Va. Va. D.C. N.I. D.C. Mass. D.C. Va.	McPherson, Clara Lillian McPherson, Trent Ordo, Jr. McPherson, Harry Simpson, Jr. A.B. in Ed. 1947, The George Washington University	D.C. Md. Va.
McLaren, Turner Sheppard B.S. 1945, Mississippi College	Va.	McQuarrie, Howard Gurr	Utah
McLanahan, Stanley Lee B.S. 1945, Ursinus College	D.C.		
McLean, Dorothy Mae McLennan, John Skelton A.B. 1951, University of North Carolina	Va. A.K. N.C.		
McLennan, William Stuart B.S. 1949, University of Oregon	Oreg.		
McLennon, Janet Watts A.B. 1949, University of Oregon	Oreg.		
McLeod, Barbara Ann	Va.		

McQuighan, Joseph Edward	D.C.	Melhorn, George Ira	Pa.
McQuilkin, William Thomas	Va.	Melin, Grace Hathaway	Md.
A.B. 1937, Emory and Henry College		A.B. 1941, The George Washington University	
McRae, John Edwin	Mich.	Mellott, Douglas William, Jr.	D.C.
B.Ch.E. 1948, University of Detroit		Melo, Francisco dos Chagas	D.C.
McSherry, Jeanne Marie	N.Y.	Master of Law 1946, Brazil	
B.S. 1947, Pennsylvania State College			Calif.
McTigue, William Edward	Mass.		
B.S. 1930, University of Massachusetts		Meirose, Richard Allan	
McVay, Marion E.	D.C.	B.S. in Bus. Admin. 1936, University of Southern California	Md.
McVey, Katharine Jane	Ill.	Meltzer, Malcolm Lee	Ill.
McWhorter, Geraldine Fullbright	D.C.	A.B. 1951, Western Maryland College	
B.S. 1947, University of Georgia		Meltzer, Sam	Va.
McWilliams, John Richard	Ind.	B.S. 1947, Northwestern University	Fla.
Meacham, Vennor J., Jr.	Md.	Memory, Alvin Lee	
B.S. 1944, Brigham Young University		Mena, Eloisa	
Meade, Ruby Louise	D.C.	B.S. 1942, Institute de la Habana	Mass.
Meade, William Spencer	D.C.	Menard, Donald John	D.C.
Meador, Robert Eugene	Mich.	Mende, Gilbert Hancock	
Meador, Norward Archibald	W.Va.	Mendelson, Anne Irene	D.C.
A.B. 1952, Virginia Military Institute		A.B. 1942, Hunter College	Philippines
Meadows, Miles Whitman	Ark.	Mendelson, Sibyl Ann	
LL.B. 1948, John Marshall Law School		Mendoza, Abraham Maniago	
Meadows, Richard Carl	D.C.	Menecey, Marvin Lawrence	
A.B. 1950, The George Washington University		B.S. 1949, Pennsylvania State Teachers College, Bloomsburg	D.C.
Meadows, Waldene Hastings	Kan.	Menist, Harvey Thomas	D.C.
Meagher, Richard Allen	Md.	Mensh, Phyllis Diane	D.C.
Meagher, Vincent Michael, Jr.	Ga.	Merat, Khosrav	Va.
B.S. 1950, Georgia Institute of Technology		Mercer, Carol Richardson	
Meaney, Thomas Francis	D.C.	Mercer, Margaret Esther	
B.S. 1949, Georgetown University		B.S. 1937, M.S. 1939, A.M. 1943, University of Illinois	Wa.
Meats, William T.	Va.	Mercier, Robert Francis	D.C.
Mebane, Banks Holt	N.C.	Mercker, Rodney Clark	
B.S. 1949, University of North Carolina		B.S. 1951, Michigan State College	D.C.
Meder, Cecil	Va.	Mercogliano, Charles Eugene	Md.
Mellford, Charles Eugene	Va.	Mercogliano, Victor Mario	D.C.
B.S. 1950, University of Virginia		Meredith, Robert Joseph	Italy
Meehan, William Lloyd	Va.	Merello, Andrea Angelo	D.C.
B.S. 1951, Alabama Polytechnic Institute		Meride, Harold Francis	
Meehs, Anna Ruth	Md.	LL.B. 1921, A.B. 1952, The George Washington University	Md.
A.B. 1926, Goucher College		Meride, Paul Edmund	Va.
Ed.M. 1946, University of Maryland		A.B. 1950, Harvard University	
Meenen, Elwyn Lester	Mo.	Merker, Evelyn Klibaner	
A.B. 1942, Washington University		A.B. 1941, Hunter College	
Meers, Josephine Marie	Ind.	A.M. 1948, Columbia University	D.C.
Merrill, Harry Newlin, Jr.	D.C.	LL.B. 1951, New York University	Md.
Merriniss, Walter Murphee	Fla.	Merklein, Wolf Werner	D.C.
B.S. 1947, U.S. Naval Academy		Merkler, Norman Lowell	
Melba, Aparna	D.C.	Merlin, S. D.	
A.B. 1952, Elphinstone College, Bombay, India		A.B. 1937, A.M. 1939, University of Chicago	Calif.
Meier, Frederick Craig	Md.	Merlone, Eleanor Frances	D.C.
A.B. 1950, University of Maryland		Mermel, Yvonne Therese	D.C.
Meier, Julius Conrad	Mass.	Mermelstein, Rita	Va.
B.S. in E.E. 1930, Clarkson College of Technology		Merow, James Forbes	N.C.
Meier, Morton Warnock	D.C.	Merriam, Burt Nelson	D.C.
Meier, Robert Willy	D.C.	Merriam, Georgiana Kay	Calif.
Meierovics, Gunars Imants	D.C.	Merrile, Patricia Ann	Ill.
Meikle, Louise Chalice	D.C.	Merrill, Robert Archer	
Meiner, Marian Lehman	Fla.	Merriman, Richard Mathus	
Meinhart, Marilyn Bass	N.Y.	B.S. in E.E. 1950, Milwaukee School of Engineering	Wyo.
Meisels, Milton	D.C.	Merrins, Leroy Lawrence	Va.
A.B. 1938, University of Wisconsin		Mertinaitis, Eugenia	N.Y.
Meisinger, Jack Arthur	Pa.	Mervis, Stanley Howard	
Meland, Creighton Roland	Md.	B.S. 1947, B.C.L. 1950, College of William and Mary	D.C.
B.S. in E.E. 1952, University of Wisconsin		Merwin, John Chester	
		A.B. 1950, University of Maryland	

Students Registered

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Mesitow, Barbara Jean	D.C.	Miele, Albert John	D.C.
Messow, Harold Esiah	D.C.	B.S. 1950, Georgetown University	
Messenheimer, Alva Donald	Kans.	Miestfield, Roger Randolph	Wis.
B.S. in E.E. 1947, Kansas State College		Miguel, Gerommo	Va.
Messer, Ross Acker	Texas	Mihalik, Mary Helen	Mich.
Messierly, Dorothy Alverta	D.C.	Miho, Katsugo	Hawaii
A.B. 1950, Elizabethtown College		A.B. 1949, University of Hawaii	
Messersmith, James Carl	Mo.	Mikalaszkas, Francis	D.C.
A.B. 1943, University of Missouri		Mosheh, John Louis	Va.
A.M. 1951, The George Washington University		Misano, Dominick Joseph	Md.
Messick, Vernon Delaney	Va.	Mitazzo, Salvatore Louis	N.Y.
Messick, William Lee	Md.	B.S. 1950, U.S. Merchant Marine Academy	
Messall, Roy Lloyd	Mont.	Miles, Benjamin Cottman	Md.
A.B. 1942, Culver-Stockton College		Miles, Betty Evelyn	Pa.
Metcalf, Howard Hurtig	Md.	A.B. 1943, Bucknell University	
Metcalf, James L.	Va.	Milestone, Gordon Krupsaw	D.C.
Mettner, William Henry	Md.	B.S. 1942, M.S. 1951, Massachusetts Institute of Technology	
Mettner, William Joseph	Va.	Milench, Ann Theresa	D.C.
A.B. 1942, University of Pittsburg		Mileu, Alfred Donald	Okla.
Metz, Donald William	D.C.	L.L.B. 1949, The George Washington University	
Metzger, Heloise Michelle	D.C.	Miley, Charles Edward	Va.
Metzner, Norma Rich	Md.	B.S. 1945, Roanoke College	
A.B. 1940, University of Wisconsin		Milice, Teresa Elizabeth	D.C.
Mews, Yvonne Therese	Ariz.	Milone, Lillian Lucy	Pa.
Mew, Vera Ellen	Ga.	Miltzer, Gustave David	D.C.
A.B. 1949, University of Georgia		B.S. in P.E. 1950, The George Washington University	
Meyer, Ardo Xanar	Nebr.	Millar, Glenn Collins	Calif.
Meyer, Calbot Wilster	Md.	Miller, Allen Howard	Va.
Meyer, Carolyn Warner	Md.	Miller, Alvin	D.C.
Meyer, Elizabeth Anne	Va.	Miller, Barbara Ann	D.C.
Meyer, Gerald Lewis	Iowa	B.S. 1951, Albright College	
Meyer, Hanny Friedel	Va.	Miller, Barbara Lee	D.C.
A.B. 1950, The George Washington University		Miller, Charles Edgar	Ind.
Meyer, Henry Emerson	Va.	Miller, Charles Robert	D.C.
Meyer, Jackie Gene	Ind.	Miller, Charles William, Jr.	Va.
Meyer, Marie Maryuerite	D.C.	Miller, Dana Prescott, Jr.	Va.
Meyer, Yura Darrell	Va.	Miller, David William	D.C.
Meyers, Daniel	N.Y.	Miller, Doris Elaine	D.C.
A.B. 1950, The George Washington University		A.B. 1940, University of Minnesota	
Meyers, Francis de Sales	Md.	Miller, Dorothy Ann	Va.
B.S. 1950, Boston University		Miller, Dorothy Hamilton	
Meyers, Leonard H.	N.Y.	A.B. 1944, American University	
Meyers, Lewis Arthur	D.C.	A.M. 1938, The George Washington University	
Meyers, Marjorie Castle	Md.	Miller, Edith Homay	Md.
B.O.E. 1939, Ithaca College		B.S. 1935, University of Idaho	
Messerson, Ted Leroy	D.C.	L.L.B. 1946, The George Washington University	
Michael, Frank	D.C.	Miller, Elliott Laurence	D.C.
Michaels, Richard Morton	D.C.	A.B. 1951, Brooklyn College	
B.S. 1949, Bates College		Miller, Emma Enright	Va.
Michaud, John Byron	Minn.	Miller, Georgia Ann	D.C.
A.B. 1950, University of Minnesota		Miller, Gerald Joseph	D.C.
Michael, Robert William	Fla.	A.B. 1952, The George Washington University	
B.M.E. 1950, New York University		Miller, Gladys L.	Ohio
Michals, Vern Edward	Mont.	Miller, Gloria Smith	Md.
Mielson, Paul Frederick	Md.	Miller, Harry, Jr.	Md.
Melanson, Allen	N.Y.	Miller, Hilda Naomi	Fla.
B.S. 1948, M.P.A. 1949, New York University		Miller, Howell Douglas	D.C.
Michni, Louis Joseph	Del.	D.V.M. 1941, Agricultural and Mechanical College of Texas	
A.B. 1941, University of Delaware		Miller, Hugh Michael, Jr.	D.C.
M.S. 1949, The George Washington University		Miller, James Garvis	Va.
Michelson, Charlotte Sue	D.C.	B.S. 1949, Roanoke College	
Mico, Helen Louise	Va.	Miller, Janet M.	D.C.
Middlebrooks, Suzanne	Va.	Miller, Jean Lois	D.C.
Mingetion, Maury, Jr.	Va.	Miller, Jeannine Dolores	Md.
Midland, Marvin Gilbert	Ill.		

Miller, John Alexander	D.C.	Mills, Lorraine Griggs	D.C.
Miller, John Charles, Jr.	Md.	A.B. 1945, The George Washington University	Va.
Miller, Joseph Adolf	D.C.		Md.
Miller, Joseph Edward	Md.	Mills, Mary Ellen	
Miller, Judith Ann	D.C.	Mills, Ralph Marvin	Va.
Miller, Julia May	Iowa	B.S. 1951, Oklahoma City University	Ia.
Miller, Keith Hugh	Md.	Mills, Ralph Waldo	D.C.
A.B. in Govt. 1950, The George Washington University		Milne, Jack Gillespie	Md.
Miller, Leonard Lee	W Va.	Milne, Robert Eugene	
Miller, Margaret Elizabeth	D.C.	Milos, John Francis	
A.B. 1918, Bryn Mawr College		A.B. 1911, Dartmouth College	Md.
Miller, Marion Mitchell	D.C.	A.M. 1932, Columbia University	D.C.
Miller, Melvin Eugene	Pa.	Milto, William Edward	Va.
Miller, Michael Sanford	Va.	Milton, Mary Elizabeth	N.Y.
Miller, Mildred Cobb	Va.	Mims, Emma Marjorie	
Miller, Morrell Alfred	Ohio	Mimard, William Douglas	D.C.
A.B. 1940, A.M. 1950, Ohio State University		B.S. 1951, Queens College	Va.
Miller, Norma	Va.	Mimick, Jesse Eldon	Conn.
B.S. 1943, Indiana University		Mimick, Ralph Hue	Va.
Miller, Norman Van	Va.	Minkler, Whitney Sheldon	
Miller, Paul Jones	Miss.	Minor, Sophia Crouch	
B.S. 1920, Mississippi State College		A.B. 1952, The George Washington University	D.C.
A.M. 1942, American University			Idaho
Miller, Richard Dabney	D.C.	Minsky, Hershel Seymour	Md.
Miller, Rachel Craft	Ph.	Mischimer, H. Robert	Md.
Miller, Richard Eugene	D.C.	Mitchell, Amicus	Va.
A.B. 1940, The George Washington University		Mitchell, Anita Floyd	
Miller, Robert Hansell	Md.	Mitchell, Anna Lou	D.C.
A.B. 1951, Brown University		B.S. in Ed. 1942, University of Georgia	D.C.
Miller, Robert Allen	Fla.	Mitchell, Arthur Ray	N.H.
A.B. 1952, Duke University		Mitchell, Bernice Lillian	
Miller, Robert Earl	Va.	Mitchell, Charles Bradfield	
Miller, Robert F.	Va.	Ph.B. 1928, A.M. 1929, Wesleyan College	Va.
B.S. 1931, Franklin and Marshall College		A.M. 1918, Ph.D. 1939, Harvard University	N.C.
Miller, Robert Thomas	N.J.		
B.S. 1949, Rutgers University		Mitchell, Elizabeth	
Miller, Ronald William	D.C.	Mitchell, Fonda Nola	D.C.
Miller, Roy Lee	Va.	Mitchell, Henry C.	Va.
A.B. 1947, Bridgewater College		B.S. 1947, Florida Southern College	Va.
A.M. 1952, The George Washington University		M.S. 1951, Vanderbilt University	Va.
Miller, Ruth Zollinger	Md.	Mitchell, Hugh Fraley	
Miller, Samuel Peter	Va.	Mitchell, Jean Winters	D.C.
Miller, Sanford Marvin	N.J.	Mitchell, John Howard	
Miller, Stanley Ross, Jr.	Md.	A.B. 1951, De Pauw University	
Miller, Veronica Agnes	Mich.	Mitchell, John Joseph	
B.S. 1947, University of Michigan		B.S. 1937, Boston College	Ill.
Miller, Virginia Blake	D.C.	LL.B. 1942, Georgetown University	
Miller, Virginia Grohs	D.C.	Mitchell, Leroy William	Ala.
Miller, Virginia Jane	Ohio	B.S. in E.E. 1949, Rose Polytechnic Institute	D.C.
A.B. 1945, College of Wooster			
Miller, Warren Christie	Va.	Mitchell, M. Christine	Va.
Miller, Wilbert T., Jr.	Va.	Mitchell, Marie Rose	D.C.
B.S. 1949, University of Maryland		A.B. 1942, M.L. DePuey College	Md.
Miliken, Rankin Allen	Mass.	Mitchell, Marilyn Ruth	D.C.
B.S. in F.E. 1950, Northeastern University		Mitchell, Nancy Nield	N.C.
Mills, A. Louise	Ark.	Mitchell, Robert Cleo	N.Y.
Mills, Annie Louise	Calif.	Mitchell, Robert Warren	
Mills, Donald Lee	D.C.	Mitchum, Paul Arnold, Jr.	
Mills, Doris May	Va.	B.S. 1951, High Point College	
A.B. 1945, University of Richmond		Mittenthal, Richard	Md.
Mills, George F.	N.Y.	A.B. 1948, Cornell University	D.C.
Mills, Hayden William	Tenn.	LL.B. 1951, New York University	
B.S. 1950, University of Kentucky		Mittleman, Dorothy Ann	Md.
Mills, James Slagle	Va.	Mitzner, Helen Ruth	Ph.
Mills, Lee Edison	Va.	B.S. 1958, University of Wisconsin	Calif.
		Mizelle, Fenton Vivian	Md.
		Mizner, Joseph John	
		Mjehovich, Francis Nike	Fla.
		Mosle, Elise Wootton	
		A.B. 1919, Goucher College	
		Mobley, Winston Summerfield	

Moder, Irving A.B. 1948, The George Washington University	N.Y.	Montedonico, Eleanor Love Montemeroso, Anita Pablo Monteon, Elvia M.	Md. Philippines D.C.
Moffitt, Albert Jay B.S. M.S., 1949, The George Washington University	D.C.	A.B. 1950, University of Maryland	W Va. Md.
Moe, Albert Lindstrand B.S. 1928, University of California	Calif.	A.B. 1951, University of Maryland	D.C. D.C.
Moe, Alfred Bron A.B. 1949, The George Washington University	Va.	Montgomery, Robert Hayes Montgomery, Robert Massey A.B. 1949, Arkansas State College	W Va. D.C. D.C.
Moe, Janet Marie B.S. 1941, University of Minnesota	D.C.	Montgomery, Virgil Lee Montzka, Arthur Dale	D.C. Md.
Moe, Stanley Keim Moses, Gave Gross Moe, Herbert Edwin B.S. 1954, University of Pennsylvania	Calif. N.Y. N.Y.	Mood, Florence Fulton Moody, Tom A.B. 1949, I.L.B. 1951, University of Texas	Texas
Moe, Dade William B.C.E. 1948, M.S. in C.E. 1948, Georgia Institute of Technology	Fla.	Mooney, William Ray A.B. 1947, James Millikin University	Ill. Va.
Mohr, Morton Molitor, Constance Lexovson A.B. 1948, The George Washington University	N.C. D.C.	Mooney, Ann Louise Aldrich A.B. 1948, Columbia University L.L.B. 1950, New York University	N.Y. D.C.
Mollitt, Jane Lee Moller, Jean H. A.B. 1922, Lockport College A.M. 1931, Columbia University	D.C. D.C.	Mooney, James Joseph L.L.B. 1950, New York University Mooney, Stewart Walter	Va. D.C. D.C.
Moller, Charles Henry, Jr. Moller, Edith Arnes B.S. in Ed., Lockport College	Va. Va.	Moore, Boubie Ruth Moore, David Lewis A.B. 1946, Harvard University L.L.B. 1942, The George Washington University	D.C.
Moller, Paul Franklin Moller, Edith Rowley Molnar, Elsie Elizabeth Certificate of Law 1941, Diploma in Law 1942, Lockport Law Classes	Va. D.C. D.C.	Moore, Donald Francis Moore, Donald Hamilton, Jr. B.S. 1950, The George Washington University	D.C. Md.
Molnar, John A. B.S. in H.E., The George Washington University	N.D.	Moore, Earl Kenneth Moore, Edward Taylor Moore, Elmer Lee	Tenn. Texas Md.
Mol, Casper Frank Moore, Roy M. Gregor Morton, Louis Scarpola Mott, Robert John B.S. 1950, Syracuse University	Va. Md. D.C. N.Y.	Moore, Grace McGinnis Moore, Henrietta Simpers Moore, James Edward Moore, James Lawrence Moore, Kenneth S.	Pa. Ind. D.C. W Va. D.C.
Motter, John Alfred Mott, Robert Edward A.B. 1941, Lebanon Valley College	N.J. N.J.	Moore, Margaret Anne Moore, Marjorie Harris, Jr. Moore, Patricia Anne	Va. Va. D.C.
Mott, John Bromberg B.S. 1947, Lehigh College	Mass.	Moore, Samuel Vasek B.S. 1942, University of Maryland	D.C.
Mott, John William A.B. 1949, The George Washington University	Md.	Moore, Sarah Frances Moore, Stewart Vincent A.B. 1943, Bethany College B.S. 1948, Carnegie Institute of Technology	W Va.
Moore, Roy M. Gregor Mott, Antoinette Madeline Mott, Edward Mott, John, Earl Jay A.B. 1951, The George Washington University	Md. Md. Mich. Va.	Moore, Thomas Wesley Moore, Wandy James A.B. 1951, Emmanuel Missionary College	Va. Md.
Moore, Gerald Morgan A.B. 1949, The George Washington University	Texas	Moore, Wesley Benjamin Moore, William Andrew A.B. 1950, West Virginia University	D.C. D.C.
Moore, Donald Wesley Moore, Joseph Leon B.S. 1949, University of Denver	Ill. Colo.	Moore, Wilson Howard Moorehead, Katherine Ann A.B. 1950, Madison College	Va. Va.
Moore, William Eugene A.B. 1950, The George Washington University	Ky.	Moorehead, Jean A.B. 1931, Hastings College A.M. 1940, Columbia University	D.C.
Montanelli, Riccardo Gori Doxon in Law 1946, University of Florence, Italy S.J.D. 1950, University of Virginia	N.J.	Mora, Jose Antonio Moraes, Jose Lima e Silva de Morales, Donald Chauncey A.B. in Govt. 1951, The George Washington University	D.C. D.C. Md.

Morales, Yordan, Jorge	D.C.	Morrison, Claude Oliver	Nebr.
A.B. 1948, University of Puerto Rico		B.S. in Ed. 1933, University of Nebraska	D.C.
LL.B. 1952, The George Washington University		Morrison, James Robert	
Moran, Andrew John	Md.	B.S. in Eng. 1951, The George Washington University	D.C.
Moran, Francis Leo	D.C.	Morrison, Ralph Robert	D.C.
Moran, J. Durkin	Calif.	Morrison, Robert Eugene	Md.
Moran, Robert Emmet	Md.	B.S. 1950, High Point College	D.C.
A.B. 1952, The George Washington University		Morrison, Thomas Lloyd	
Mordy, James Calvin	Mo.	Morrison, Frances F.	Pa.
A.B. 1947, University of Kansas		A.B. 1939, Barnard College	D.C.
LL.B. 1950, University of Michigan		Morrison, Frank Douglas	Md.
Morehouse, Lucille Vivian	N.Y.	Morrow, Katherine Rippey	D.C.
Moreland, Alice Prince	Kans.	Morrow, Ralph Clifford	D.C.
Moreland, Chester Martin	D.C.	Morse, Marjorie Lee	
Moren, Clarence Gill	Conn.	A.B. 1952, The George Washington University	D.C.
A.B. in Govt. 1950, The George Washington University		Mortimer, Doris Haignere	D.C.
Morenko, O. Dorothy	Pa.	B.S. 1939, Ohio State University	
Morenko, Verone Josephine Rexroat	D.C.	Morton, Mary Alice	Ga.
Morgan, Donald Ray	Pa.	B.Mus. 1945, Coe College	
Morgan, Elaine	Md.	Morton, Thomas Henry	Va.
Morgan, Nancy Lu	Va.	A.B., LL.B. 1948, Mercer University	Va.
Morgan, Robert Elton	Md.	Morton, Wilbur Young	Va.
B.S. in Eng. 1950, The George Washington University		Moseley, Kyra Barbara	
Morgan, Robert Henry	Md.	Moseley, Alice Sydney	Va.
Morgan, Robert Stong	Tenn.	B.S. 1941, Madison College	
Morgan, Ronda Guillory	D.C.	Moseley, Edward Carleton	Ms.
Morganstern, Edwin Alan	D.C.	B.S. 1950, Lynchburg College	Va.
B.S. 1946, Long Island University		Moser, Bernice	D.C.
Morgret, Charles Oscar	Md.	Moser, Ernest Cleveland	D.C.
Morisset, Clarence Abner	Md.	Moshier, Annette Mary	
Mori, Kenjiro	Japan	Mosier, Mary Fortis	
Morin, Sarah Catherine	W.Va.	A.B. 1947, The George Washington University	D.C.
A.B. 1926, Trinity College		Moskova, Malvina Marina	D.C.
LL.B. 1932, LL.M. 1933, Columbus University		Moskowitz, Margaret Moore	D.C.
Morin, Joseph Everts Proctor	Calif.	Mosman, Helen Frances	D.C.
A.B. 1942, Stanford University		Mosman, Kenneth Freeman	D.C.
Moritz, Karsten Herbert	Germany	A.B., A.M. 1951, The George Washington University	
A.M. 1952, University of Chicago		Moss, Arnold	D.C.
Morley, John Royal	N.J.	B.S. 1952, University of Maryland	
A.B. 1949, Marietta College		Moss, Arthur Robert	Ill.
Morlock, Harry Kenneth	D.C.	B.S. 1949, College of the City of New York	
A.B. 1951, The George Washington University		Moss, Frank H.	D.C.
Morowitz, Lucille Stein	Md.	A.B. 1936, A.M. 1940, University of Chicago	Md.
Morox, Walter Stanley	Md.		Ms.
Morrell, Donald Clark	N.Y.	Moss, J. B.	Ala.
A.B. 1940, Colgate University		Moss, Robert Cramton	
Morrell, Roger Metcalf	Md.	Moss, Robert Harvey	
B.S. 1952, Haverford College		Mott, Charles Davis	Ms.
Morris, Elizabeth Louisa Moss	D.C.	B.Sc. 1916, University of Pennsylvania	Md.
B.Sc. 1911, New Jersey College for Women		Mott, Keith Allen	Va.
Morris, Francis Harrison	Md.	Mountain, Raymond	
Morris, Gladys Christine	Md.	Moutie, Rupert Francis	Va.
Morris, Jack Curtis	Ill.	A.B. 1951, The George Washington University	Tenn.
A.B. 1949, Columbia University		Mourning, Caroline Thwing	S.C.
Morris, John Leonard	Iowa	Moutos, Minelao George	
Morris, Joseph Paul	Va.	Mouzon, Isabelle Gordon	N.Y.
Morris, Patricia Anne	D.C.	A.B. 1929, Winthrop College	Ga.
Morris, Robert Boston	D.C.	Mowshowitz, Eleanor Joyce	D.C.
Morris, Robert Leary	D.C.	Moxley, George King	D.C.
Morris, Robert Melvin	Md.	Mox, Charles Herbert	D.C.
B.S. 1924, U.S. Naval Academy		Moy, David Eugene	D.C.
Morrison, Andrew Terris, Jr.	Del.	Moy, James	D.C.
Morrison, Carson Carmon	Md.	Moy, John Gong	D.C.
A.B. 1928, P. H. Union College		Moye, Lois Marilyn	D.C.
M.S. 1932, University of Southern California		Moyer, Edna C.	D.C.

Moyer, Marian Diane	D.C.	Murayama, Ann Tsuncko	Hawaii
Moyer, Wilbur Joseph	Pa.	Murdock, Ben Joseph	Va.
A.B. 1936, St. Francis College, Pa.		Murdock, Cinda Lee	D.C.
M.S. 1947, Pennsylvania State College		Murdock, James Baird, Jr.	Ohio
Moyle, Walter Gladstone, Jr.	D.C.	Muresianu, Dinu Alexandrescu	D.C.
B.S. 1946, U.S. Naval Academy		Murnan, Christine Agnes	D.C.
Moyman, Richard Edward	Mass.	Murphy, Jesse Oran	Texas
Mazzarone, Anthony Thomas	Pa.	Murphy, Randolph Clay III	Va.
Muccino, Angelo Joseph	Pa.	Murphy, Barbara Fuller	D.C.
B.S. 1948, Waynesburg College		A.B. 1949, The George Washington	
Muehlhaase, William	D.C.	University	
Mueller, Kunigunde Marie	D.C.	Murphy, Barry Daniel	Va.
Mueller, Stanley Adolph Julius	Calif.	Murphy, Claire Mary	Mass.
A.B. 1952, University of California		Murphy, James Emmett	Va.
Munich, Peter Harris	Calif.	Murphy, Jane Elizabeth	Pa.
B.F.S. 1949, University of Southern		Murphy, John Ancona	Md.
California		B.S. 1948, Georgetown University	
Muenchow, William F.	D.C.	Murphy, John William	D.C.
A.B. 1948, University of Wisconsin		Murphy, Lawrence Marsielles	D.C.
Munson, Melvin Malcolm	D.C.	Murphy, Lucretia Anne	Md.
Star, Matthew Sharp	Hawaii	Murphy, Marguerite T.	Mass.
B.B.A. 1954, University of		A.B. 1951, College of Our Lady of	
Washington		the Elms	
Mukasa, George Mitsugi	Wash.	Murphy, Marjory	Minn.
A.B. 1942, University of Washington		A.B. 1943, St. Lawrence University	
Mila, Salvatore Ralph	N.Y.	Murphy, Maurice Francis	D.C.
Moser, J. Albert Andrew	Md.	B.S. 1941, Marquette University	Pa.
Mulachy, Julia Josephine	Mass.	Murphy, Raymond Augustine	Va.
A.B. 1951, Wellesley College		Murphy, Reiko Terashi	Md.
Mulford, Roger Elton	Va.	Murphy, Richard Ernest	
B.S. 1956, Cornell University		A.B. 1943, St. Lawrence University	
Mulvaney, John Kenneth	Md.	A.M. 1952, The George Washington	
M.E. 1959, Stevens Institute of		University	
Technology		Murphy, Robert Lawrence	D.C.
Muller, Marion Mitchell	D.C.	Murphy, Rosemary Kathleen	D.C.
Muller, Frank	N.Y.	Murphy, Thomas Daniel	Conn.
B.L. 1952, Yale University		Murphy, Walter Francis	S.C.
Mullan, Barry Wayne	D.C.	A.B. 1950, University of Notre Dame	
B.S. 1949, Georgetown University		Murphy, William Raymond, Jr.	Ohio
M.S. 1951, Catholic University of		B.S. 1940, University of Akron	
America		Murphy, William Russell	Va.
Mullin, James Rothwell	Iowa	A.B. 1948, College of William and Mary	N.J.
Mullins, Joseph Latimer	S.C.	Murray, Frank J.	
Mullins, Ernest Brown	Va.	B.S. in M.E. 1951, Lehigh University	Va.
Mullins, Jessie Edith	Va.	Murray, Helen Hollen	
A.B. in Govt. 1950, The George		A.B. 1926, Marietta College	D.C.
Washington University		Murray, Imelda Frances	Md.
Mullins, Raymond Wendell	D.C.	Murray, James Gluck	
Mullins, Theodore Charles	Ga.	B.S. in M.E. 1948, University of	
Mullins, Leona Barbara	D.C.	Maryland	
Mullins, Alvin Anne	Va.	M.S. in M.E. 1952, University of	
Murphy, Greer Louis	D.C.	Washington	
Murphy, Louis Pat	Md.	Murray, John Joseph, Jr.	Mass.
A.B. 1948, M.S. 1950, The George		B.S. 1949, Boston College	
Washington University		Murray, Joseph	Va.
Mund, Margaret Ellen	D.C.	B.S. 1949, University of Richmond	Mass.
A.B. 1951, Duke University		Murray, Joseph Earl	Pa.
Mundy, Marjorie W.	D.C.	Murray, Mary Anne	N.Y.
A.B. 1949, Bridgewater College		Murray, Thomas Richard	Ohio
A.M. 1948, University of Virginia	Va.	Murphy, Everett Clark	
Moran, Robert Hector	Mass.	A.B. 1947, Harvard University	
Moran, Constance Louise	Md.	LL.B. 1950, The George Washington	
Moran, Lola	S.C.	University	
Moran, Albert Ralph	Va.	Murrow, Juanita Smith	Md.
B.S. 1947, M.S. 1951, University		A.B. 1948, Florida Southern College	
of Illinois		A.M. in Ed. 1947, The George	
Moran, Marlene Marie	D.C.	Washington University	Pa.
Morton, Thomas Richard	Va.	Murphy, Mary Margaret	Va.
B.S. 1951, The George Washington		Muse, William Ralph	Pa.
University		Mussett, James William	
Mosholo, Elizabeth Ann	D.C.	B.S. 1950, St. Josephs College	Md.
		Musselman, Homer Dewey	

Muteff, Martin Georgie	D.C.	Neal, Robert Martin	G4
Mutz, Sterling Burr	Calif.	A.B. 1948, A.M. 1949, Emory University	D.C.
Myers, Adda Mae	Pa.	Neal, William Alfred	D.C.
B.S. in Ed. 1949, Pennsylvania State Teachers College, Bloomsburg		Nearman, Charles Donald	AM
A.M. in Ed. 1950, The George Washington University		Nearman, Richard Edward	W.A.
Myers, Billie Ray	Md.	Nease, Betty L.	Pa
Myers, Harold	Va	A.B. 1949, Marshall College	Md
Myers, Jacob Eugene	Md.	Nedrow, John Joseph	Pa
Myers, James Paul	D.C.	Needham, Donald Alonzo	
Myers, John Gleason	Md.	A.B. 1939, Clark University	
B.S. 1951, University of Maryland		Needham, Gerard Joseph	
Myers, Robert Marshall	N.Y.	B.M.E. 1950, Catholic University of America	N.Y.
B.S. 1952, College of the City of New York		Needham, Kathryn Mary	
Myers, Sandra Lee	N.C.	B.S. 1950, St. Bonaventure's College and Seminary	D.C.
Myers, Saul Meredith	D.C.	Needle, Lloyd	E.
Mynt, Maing Kyaw	D.C.	Needler, William Lowell	
Myles, Harley Decker	Ind.	B.S. 1946, U.S. Merchant Marine Academy	Va.
Myrianthopoulos, Ninos Cleyoulou	D.C.	B.S. 1950, University of Illinois	
Myriose, Chester Paul	Mass.	B.S. 1948, Columbia University	D.C.
A.B. 1940, Catholic University of America		Neely, Irene Loyet	
A.M. 1952, University of Texas		A.B. 1927, A.M. 1928, LL.B. 1934, University of Paris	W.Va.
N		Neely, Hubert Arthur	Md
Nabil, Yadollah	Iran	B.S. 1951, Marshall College	D.C.
Nabulsi, Martha Dewell	D.C.	Neely, James Curtis	D.C.
Nadishem, John I.	N.J.	Neely, John Crosby	D.C.
B.S. in N.A. and M.E. 1947, Webb Institute of Naval Architecture		Neff, George Roy	D.C.
Naddeo, Nathan James	D.C.	Neff, Oran Elbert	N.Y.
Nagel, Eileen	N.Y.	Negri, John Joseph	D.C.
Nagle, John Jacob	Md.	Negrine, Elie	
B.S. 1950, University of Maryland		Nemelson, Paul	
Nagle, Millard Howe, Jr.	ML	B.S. 1951, The George Washington University	D.C.
Nadler, Norbert	D.C.	Neighborhood, Patricia Ann	Va.
Nagy, Louis James	Mch.	Nemil, Lila Louise	
A.B. 1952, The George Washington University		B.S. 1935, Virginia State Teachers College, Harrisonburg	N.H.
Naiman, Julius Benjamin	D.C.	Neilon, John James	N.Y.
Naisako, Edward George	Pa.	A.B. 1949, St. Anselm's College	D.C.
B.S. 1946, University of Pennsylvania		Neira, Arthur Remond	N.J.
Nall, Betty Hudson, Jr.	Md.	Neizev, Mary Regina	
Nalley, Jacqueline Olivia	D.C.	Nelson, Arthur Edward	Md
Nalla, John Willard, Jr.	Md.	B.S. 1949, Upsala College	D.C.
Nally, Robert Vincent	Pa.	Nelson, Carl Anders	Ill.
A.B. 1950, St. Francis College, Pa.		Nelson, Daniel Vernon	
Namari, Joseph	Canada	Nelson, Donald L.	D.C.
B.S. 1949, Punjab Agricultural College		B.S. 1950, Michigan State College	
M.S. 1951, Michigan State College		Nelson, Dorothy Alice	
Nanna, Emmett Hilim, Jr.	Mad.	A.B. 1951, Arizona State College	D.C.
A.B. 1950, University of Maryland		A.M. 1944, University of Colorado	Md
Nanos, Virginia Andrea	D.C.	Nelson, Dorothy J. M.	D.C.
Napier, Nelda Newell	Mch.	Nelson, Harvey Kenneth	Md
A.B. 1945, University of Michigan		B.S. 1950, University of Minnesota	Mch.
Nardini, John Paul	Pa.	Nelson, Haywood Bennett	D.C.
Nard, Andrew John	N.Y.	Nelson, James W.	
Nash, Constance M.	D.C.	Nelson, Kenneth Chester	
Nash, William Henry	N.Y.	Nelson, Lisle Whittington	
Nashwa, Selva Aiko	Hawaii	Nelson, Mary Jane	
Nasrath, Mary Elizabeth	Va.	A.B. 1948, The George Washington University	D.C.
Nasrath, Raymond	D.C.	Nelson, Meile Ellsworth	D.C.
B.C.S. 1941, University of Denver		B.B.A. 1949, University of Minnesota	
Nasrot, Dorothy G.	Md	Nelson, Raymond Arthur	Va.
Nasrot, James Bernard	S.D.	A.B. 1941, Tusculum College	Md
Neal, Betty Ann		Nelson, Richard Harold	Am.
A.B. 1947, University of Iowa		Nelson, Walter James	
Neal, Cathryn Alice	D.C.	Nelson, Warren Jones	
A.B. 1952, Western Maryland College		B.S. 1948, University of Wisconsin	
Neal, Patricia Anne	Canada		

Students Registered

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Neneman, Theresa Bell B.S. 1940, New York University	D.C.	Nida, Edward Robert	D.C.
N.S. 1941, University of Pennsylvania		Nido, Svea Jane	Vt.
Neibatt, Betty Rae	Va.	Niedfeldt, Clyde Edward	D.C.
Neibatt, John	Md.	Nielsen, Clayton George	Md.
Nesmith, Robert Earl	Ga.	B.S. 1932, University of Maryland	
Ness, Rudolph Walter	Va.	Nielsen, Jean Beverly	D.C.
Nessor, Rosalie Eleanor	D.C.	Nielsen, Jessie Patricia	N.Y.
Nesdaufer, Lawrence Sterling	N.Y.	Nielsen, John B.	D.C.
Nesmat, Arthur Ewald	Wis.	Nielsen, Lavern Marinus	Pa.
B.S. 1939, Memphis State College		A.B. 1952, Temple University	
Nesmen, Rose	Va.	Nielsen, Robert Berg	Calif.
Nesmen, Pearl Marie	Md.	B.S. 1948, Georgetown University	
A.B. 1948, College of William and Mary		Niemi, Roma Bernadine	Mich.
Nesman, Richard Keith	Md.	Niemi, Viola Eleanor	Mich.
A.B. 1951, The George Washington		Nenas, Otto Carl, Jr.	Wis.
University		Nieves, Rafael A.	Puerto Rico
Nessee, Elizabeth Ann	Iowa	Nash, Evelyn Marie	Wis.
Nessee, James Frank	Iowa	Nash, Thomas Lillian	I.C.
Nesnell, Miriam Samet	Coun.	Nolan, John Roger	Md.
Nessee, John Redway	Va.	A.B. 1936, Lebanon Valley College	
Nessee, Glenn Everette	D.C.	A.M. in Public Administration 1952, The	
B.S. 1949, M.S. 1951, University of		George Washington University	
Florida		Niles, Richard Martin	Mass.
Nesley, Love Esther	D.C.	B.S. 1942, U.S. Naval Academy	
Nesley, Florence Irene	Vt.	Niles, Theodore Lyman	N.Y.
Neswald, Marianne Meale	Pa.	A.B. 1941, Yale University	
A.B. 1952, Connecticut College		A.M. 1948, Columbia University	
Neser, Betta Jean	Va.	Nelson, Paul Gilbert	Md.
Neser, Evelyn	Mass.	Nelson, Byard Garn	Utah
B.S. 1951, Bridgewater Teachers College		B.S. in E.E. 1950, University of Utah	
Neser, Hugh Logan	D.C.	Nemetz, Gary Jack	D.C.
Neser, Patricia Ann	D.C.	Nimmern, Barbara Joy	D.C.
Neser, Leroy	N.I.	Niner, Patricia Marie	W.Va.
Neser, Mary Ellen	Vt.	Nin, Anas	Israel
Nesman, Henry Carl	Md.	Nivans, Ruby Lois	Texas
B.S. 1949, University of Illinois		Nixdorf, Florence Herma	Md.
Nesman, Jack		B.S. 1952, Western Maryland College	
Nesman, Margaret Anne	D.C.	Nixon, Charles Richard	Idaho
Nesman, Paul Edward	D.C.	B.S. 1950, Idaho State College	
Nesman, Noel Clayton	D.C.	Nizami, Martha	Ga.
A.B. in Govt. 1949, The George		A.B. 1950, Columbia Bible College	
Washington University		Nizankowski, Zenon	D.C.
Nesman, Alice Jewett	Alone	Dr. Jur. 1927, University of Cracow	
Nesman, Lillian Orinay	D.C.	Noe, Carl Vernon	Mich.
Nesman, James Robert	N.C.	Noell, Rebecca Young	N.C.
Nesman, Marie Cummings	D.C.	Noell, William Cedric	Va.
Nesman, Merrill R.	D.C.	B.S. 1924, Virginia Military Institute	
B.S. 1949, Georgetown University		Noonera, Pedro	N.Y.
Nesman, Walter David	D.C.	Nolan, Arthur Joseph	N.Y.
B.S. 1942, A.M. 1948, Ph.D. 1952,		A.B. 1949, Columbia University	
The George Washington University		Nolan, Margaret Mary	Mass.
B.E. 1949, Wisconsin State College		Nolan, Michael Owen	D.C.
Nes, Vernal	Md.	Nolan, Raymond Vincent	Va.
Nes Milo Alanzo, Jr.	Md.	Nolan, Rebecca Schell	Fla.
B.S. 1952, Lehigh University		Nolan, Robert Leslie	Ill.
Nathels, Bartlett Campbell	Pa.	Noland, Lillian Hooks	Va.
A.B. 1948, University of Minnesota		A.B. 1923, The George Washington	
Nichols, Louis N.	D.C.	University	
L.L.B. 1949, The George Washington		Nomkin, Milton C.	Va.
University		L.L.B. 1942, St. John's University	
Nichols, Margaret Jane	D.C.	Noone, James Henry	Md.
Nichols, Mervyn M.	N.Y.	Norby, Marian Olene	Kans.
B.S. 1951, Columbia University		B.S. 1947, Kansas State College of	
Nichols, Mildred Elizabeth	N.Y.	Agriculture and Applied Science	
Nicholson, Robert Hutton	Tenn.	Norcross, Pearl Wiggins	D.C.
B.S. 1951, University of Maryland		B.S. in Ed. 1952, Wilson Teachers College	
Nicholson, George Willis	Va.	Norden, Marjial Smith	D.C.
Nicholson, Jerome Howard	Va.	A.B. 1946, Hunter College	
Nicholson, Gordon Albert	D.C.	Nordhoff, James John	Ohio
Niedette, Benjamin Peter	M.I.	Nordin, Sven Storr	Md.
A.B. 1948, Syracuse University	N.Y.	Nordquist, Dean Anthony	Iowa
		A.B. in 1949, University of Iowa	
		Norford, Jean Garber	D.C.

Norman, Ellington Murray	Ga.	Noyes, Alvin Peter	D.C.
A.B. 1944, University of Georgia		Noyes, Anne Sheppard	Me.
Norman, Henry Robert	N.Y.	A.B. 1951, The George Washington University	Md.
A.B. 1950, Western Maryland College		Noyes, Howard Ellis	
Normandeau, Keith Joseph	Minn.	A.B. 1947, University of Tennessee	
Norment, Nancy Richards	D.C.	M.S. 1940, Ohio State University	D.C.
A.B. 1951, The George Washington University		Noyes, Margaret Charlotte	
Norr, Mariner Krumm	Va.	A.B. 1952, Dunbarton College of the Holy Cross	Calif.
B.S. 1947, M.S. 1952, The George Washington University		Nozaki, Joseph N.	Minn.
Norrington, Frances Taylor	D.C.	A.B. 1947, Emmanuel Missionary College	
A.B. 1952, The George Washington University		Nubbe, Virgil George	
Norris, Abell Archibald, Jr.	Md.	A.B. 1940, The George Washington University	Mich.
B.S. 1928, Georgetown University		Nuechterlein, Mildred Virginia	W.Va.
M.S. 1948, University of Maryland		Nunn, Joe Alexander	Va.
Norris, Charles Walter	D.C.	Nusbaum, Louis Silberman	Ind.
B.S. 1952, The George Washington University		Nussel, Gladys Waneta	Kans.
Norris, Duane Clayton	Va.	Nuttman, Harold Franklin	
Norris, Forrest Eugene	D.C.	A.B. 1950, The George Washington University	Pa.
Norris, Paul Maxfield	Md.	Nye, Harry H., Jr.	Md.
B.S. 1946, U. S. Military Academy		B.S. 1951, Juniata College	
Norris, Walter Franklin	Mo.	Nye, William David	
A.B. 1951, Westminster College		A.B. 1947, The George Washington University	Va.
Norris, Willa	Nebr.	Nyhaven, Donald Richard	
B.S. in Ed. 1934, University of Nebraska		B.S. in M.E. 1944, University of California	
A.M. in Ed. 1943, Columbia University	Ohio	L.L.B. 1951, The George Washington University	D.C.
Norseth, Howard George		Nykopp, Fritz; Dolores Martha	
B.S. 1951, Case Institute of Technology	Calif.	O	
North, Elmer Ford			Kans.
A.B. 1952, Stanford University	D.C.		Pa.
North, Patricia Nissen		Oakes, Jolene Clyde	
A.B. 1952, Stanford University	N.Y.	Oakley, Alfred A., Jr.	Va.
North, Richard Parsons	Va.	B.S. 1940, University of California	D.C.
Northrop, Anita Maxine	Va.	Oakley, Kathleen Wigton	
Northrop, John Leighton Stewart	N.Y.	Oartel, Ruth Anne	Pa.
Northrup, Barbara Winifred		B.S. 1950, University of Maryland	
A.B. 1947, Elmira College		Obarski, John Paul	D.C.
A.M. 1950, The George Washington University	D.C.	B.S. 1945, U. S. Coast Guard Academy	D.C.
Norton, Edward James		Obeart, Margaret Fealy	D.C.
A.B. 1948, Columbia University	Md.	Obeart, Mildred Eleanor	D.C.
Norton, Elizabeth Rosemary	D.C.	Oberg, Harold Stanley	Md.
Norton, Emily McMullan	D.C.	Oberholtzer, John David	
Norton, Hugh Stanton		Oberholtzer, John William	Wash.
A.B. 1947, A.M. 1948, The George Washington University	D.C.	A.B. 1940, Earlham College	
Norton, Overton Perry		Oberst, Walter A.	D.C.
A.B. 1942, University of Michigan	D.C.	A.B. 1931, University of Washington	
Norton, Shirley Ann	Md.	O'Brien, Anthony Aloysius	
A.B. 1948, The George Washington University		B.M.E. 1950, The George Washington University	Md.
Norton, William L., Jr.	Ga.		D.C.
A.B. 1943, L.L.B. 1950, Emory University		O'Brien, Harry Martin	Va.
Northstine, Kenneth Thompson	D.C.	O'Brien, James Dennis	Pa.
Noto, James Martin	Pa.	O'Brien, James Robert	Ohio
Nott, Joseph George	Pa.	O'Brien, Jane Malseed	Mass.
Novak, Dan	Pa.	O'Brien, Jean Marie	D.C.
Novak, Fred Michael	Md.	O'Brien, John Francis	D.C.
A.B. 1940, Shepherd College		O'Brien, Maida Marie	Me.
A.M. in Ed. 1950, The George Washington University		O'Brien, Marilla Ann	N.Y.
Novick, Matthew Norman	D.C.	O'Brien, Mary Lee	Va.
Novikova, Ligita	Md.	A.B. 1950, University of Maryland	Mich.
Nowlin, Joe Franklin	Ark.	O'Brien, Mary Theresa	Va.
L.L.B. 1940, University of Arkansas		O'Brien, Robert John	Va.
L.L.M. 1950, The George Washington University	D.C.	Ochocki, Phyllis Alice	
Nowlin, Nita Fay		O'Connell, John Joseph	
		O'Connell, Thomas Francis	Md.
		O'Connor, James Francis, Jr.	Ind.
		A.B. 1940, Columbia University	
		O'Connor, James Joseph	
		O'Connor, Lawrence Leo	

O'Connor, William Aloysius	D.C.	Olshaker, Thelma Abramson	D.C.
Oden, Richard Stulz	D.C.	B.S. 1947, Wilson Teachers College	
Odineal, Mary Louise	D.C.	A.M. in Ed. 1950, The George Washington University	
A.B. in Govt. 1950, The George Washington University		Olshin, John Seymour	N.Y.
O'Doherty, Marcella J.	Va.	Olson, Boyd E.	D.C.
Odum, Mary Ann	D.C.	B.S. 1941, Brigham Young University	
O'Donnell, Alice Louise	Wash.	M.B.A. 1951, Harvard University	
O'Donnell, George William	D.C.	Olson, Charlotte Loleta	Ind.
O'Donnell, Joseph Michael	Va.	Olson, Darwin Leander	N.D.
A.B. 1951, The George Washington University		B.S. 1942, North Dakota Agricultural College	
O'Donnell, Thomas Lawrence Patrick	Mass.	Olson, Doris A.	Pa.
A.B. 1946, L.L.B. 1949, Harvard University		A.B. 1951, Syracuse University	
Odor, Hugh Eberly	Md.	Olson, Hardin Elling	Va.
Odor, Harlan John	Kans.	Olson, Margaret Harlan	Ohio
Oertel, Frances Adele	D.C.	B.S. 1952, The George Washington University	
Oertel, Nelson	Va.	Olson, Ray Andrew	Calif.
Offenbacher, Thomas Ralph	D.C.	Olson, Robert Glenn	Iowa
Offenderling, Henry Theodore	Md.	Olson, Ruth Louise	Va.
O'Farberty, Patricia Ann	Va.	Olsewski, Francis John	D.C.
O'Gaden, David Pierce	Va.	Oltramare, Gabriel Charles	D.C.
B.S. in E.F. 1950, Union College		O'Malley, Edward Patrick	Pa.
Oden, Joy McAttee	Va.	A.B. 1949, Baylor University	
A.B. 1952, The George Washington University		M.S. 1948, University of Tennessee	
Oels, Paul Eugene	Md.	O'Meara, William Raymond	D.C.
A.B. 1948, University of Tennessee		A.B. in Ed. 1950, The George Washington University	
Oelby, William Edward	Texas	On, Frank Joe	D.C.
O'Gorman, John Michael	Calif.	Onderdonk, Richardson Latrobe	Md.
B.S. 1941, University of California		A.B. 1947, Trinity College	
M.S. 1942, Ph.D. 1946, California Institute of Technology		O'Neal, James David	Md.
O'Hare, Robert Emmett	Va.	O'Neil, Benjamin Willisson	Va.
O'Hare, Virginia	Iowa	O'Neil, John Thomas, Jr.	Md.
O'Haver, Robert Russell	Colo.	B.S.B.A. 1951, Boston College	
Ohlund, Jean Craig	Md.	O'Neill, Hugh Vincent	D.C.
Ohralik, Karl Anthony	Ohio	O'Neill, Robert Francis	N.J.
B.S. 1948, Ohio State University		B.S. 1940, University of Notre Dame	
Ohlschlager, Gerald Albert	Wis.	O'Neill, Salvador	Puerto Rico
Okamoto, Mitsuo	N.J.	O'Neill, Thomas E.	Md.
A.B. 1951, Drake University		A.B. 1951, St. Bonaventure's College and Seminary	
O'Keefe, Mary Frances	Pa.	Ong, Beale Hibbs	Md.
Okopinski, Charles Paul	Va.	Onufrak, John Joseph	D.C.
Oland, Harold Bradley	Va.	Opack, Jerry Howard	D.C.
Oland, Jerome Leon	N.Y.	Oppert, Donald Eugene	Ohio
A.B. 1949, Brooklyn College		Opaviz, Robert Carlson	D.C.
A.M. 1950, Columbia University		Osamuno, Diana Margarita	D.C.
Olershaw, Douglas C.	D.C.	Oram, Melvin	Pa.
Ols, Hugh Wilson, Jr.	Calif.	B.S. 1949, University of Scranton	D.C.
O'Leary, John Francis	Nev.	Onden, Barbara Norris	Va.
A.B. 1950, The George Washington University		Organ, Perry Alice	D.C.
Olsink, John Richard	D.C.	Orleans, Carolyn	N.Y.
Oles, Carl John	Md.	Ormsby, Bessie Nan	Va.
L.L.B. 1941, National University		Orndorff, Dorothy Pullen	
Olesky, Joseph	D.C.	A.B. 1949, The George Washington University	
Olin, Barbara Schwartz	D.C.	Orndorff, Raymond Rutherford, Jr.	Va.
Olin, Wilber C.	D.C.	O'Rourke, Franklin Sewall	N.J.
Olive, Boyle Miller	D.C.	A.B. 1950, Lafayette College	
A.B. 1949, University of North Carolina		Orr, Eleanor Wilson	Md.
Oliviera, Fernando de Souza	D.C.	A.B. 1949, Wells College	
Olive, Abbie Hanahan	D.C.	Ortiz, Augustine, Jr.	D.C.
Olive, Edward Eugene	Va.	Ortiz, Jose Elvov	Va.
Olive, Jean Elizabeth	N.J.	Ortiz-Truarez, Francisco G.	D.C.
A.B. 1946, Wellesley College		Ortolani, Frank Richard	Pa.
Olive, Philip Lawrence		B.S. 1944, B.S. in Ch. Eng. 1948, Pennsylvania State College	
Olmstead, William Harris, Jr.	Md.	L.L.B. 1951, The George Washington University	
Olmstead, George Leavitt	D.C.	Orzel, Rita Adele	Pa.
O'Lone, Richard George	Va.		
	D.C.		

Osburn, Ann Louise	Wis.	Ovian, Leo	B.S. 1951, M.S. 1952, University of California at Los Angeles
Osburn, Elsie Glenn	N.J.	Ovrevik, Glenn Sydney	B.S. 1951, University of Maryland
Ph.D. 1951, University of Michigan	Va.	Owen, Charles Frederick	Oven, Dorothy Mae
Osburn, Robert Ambrose	Md.	Owen Florence Thompson	Owen, Franklin Duane
Osburne, Frank Granger	Va.	Owen, Homer Leroy	A.B. 1950, Reed College
M.D. 1944, Union University	Hawaii	M.S. 1952, Cornell University	Owens, Ernest A., Jr.
Osburne, Joan Theresa	D.C.	Owens, Marjorie Gene	Owens, Ethel M.
Oshiro, Sanks	Fla.	Owens, Richard Roberts	Owens, Jack
Oshiro, Victoria Parker	Fla.	B.S. 1949, The George Washington University	Owens, James Moffatt
A.B. 1952, Oberlin College	Pa.	Owens, William Evan	Oxenham, James Price
Oster, Frederic Bruce, Jr.	N.Y.	Owens, Alvin Eugene	Oxson, Margaret Harlan
Ostlund, Ruth Caroline	Fla.	Owens, Ernest A., Jr.	B.S. 1952, The George Washington University
Osman, Herta Vera	D.C.	Owens, Ethel M.	Oyama, Jiro
Dr. Jur. 1942, University of Vienna	D.C.	Owens, James	B.S. 1949, Northwestern University
Osmon, Nancy Kay	Fla.	Ozarenham, James Price	Oyama, Vance Iwao
Osmon, Richard Barr	Fla.	Oxon, Margaret Harlan	Ozur, Herbert
Osso, Anna Dolores	Pa.	B.S. 1952, The George Washington University	A.B. 1949, New York University
Ost, Herbert Elliott	N.Y.	Oyama, Jiro	A.M. 1950, Temple University
B.S. 1947, College of the City of New York	D.C.	B.S. 1949, Northwestern University	P
L.L.B. 1949, Columbia University	D.C.	Oyama, Vance Iwao	Pasbo, Maya
L.L.M. 1953, New York University	D.C.	Ozur, Herbert	Pace, Ethel Watts
Ostergard, Dallas D.	D.C.	A.B. 1949, New York University	Pacheco, Margaret
Ostergren, Charlotte	D.C.	A.M. 1950, Temple University	Pachier, Marion Agnes
A.B. 1952, The George Washington University	D.C.	P	Pacienza, Francis Anthony, Jr.
Ostrich, Ralph	D.C.	P	B.S. 1951, Mount St. Mary's College
A.B. 1950, The George Washington University	D.C.	P	Packard, Ralph John
Ostrom, Gene Francis	D.C.	P	Packard, Robert Jeannine
Ostrowski, Wilhelm John	N.Y.	P	A.B. 1950, University of Maine
A.B. 1949, Canisius College	D.C.	P	Packwood, Norval Eugene, Jr.
L.L.B. 1951, Georgetown University	D.C.	P	Paddock, Marianna
Ostry, Paul Joseph	Md.	P	A.B. 1911, University of Michigan
O'Sullivan David Ben	La.	P	A.M. in Ed. 1949, The George Washington University
O'Sullivan, Francis Paul	Mass.	P	Padgett, Glenn Ernest
A.B. 1951, University of Southern California	Va.	P	A.B. 1949, Duke University
O'Sullivan, John Maurice	Mass.	P	Padilla, George Mario
Oswald, Elizabeth Janet	Va.	P	Padilla, Oscar Sellean
B.S. 1947, University of Maryland	D.C.	P	Padilla, Robert Augusto
M.S. 1947, The George Washington University	D.C.	P	Padilla, Sandra
Oswalt, Thelma G	Md.	P	Paffenbarger, Anne
A.B. 1928, Mississippi State College for Women	Tenn.	P	Pagan, Katharine
Ota, Robert Yoshio	Calif.	P	B.S. 1948, Wilson Teachers College
A.B. 1949, University of California	W.Va.	P	A.M. in Ed. 1950, The George Washington University
Otero, Luis Raul	D.C.	P	Page, Anne Rubin
Otto, Susan	Tenn.	P	Page, Flore Randolph
A.B. 1952, Sweet Briar College	Calif.	P	Page, James Ewin
Otto, Harry Kazuo	W.Va.	P	Page, Virginia
Ott, Frances Elizabeth	D.C.	P	Pagliaro, Mary Stafford
Ott, Iva Murrell	Va.	P	Pagliaro, Peter Joseph
Ott, Katherine Anna	D.C.	P	Palgin, Joan Betty
B.S. 1914, Western Reserve University	D.C.	P	Parsons, John
A.M. in Ed. 1950, The George Washington University	D.C.	P	A.B. 1951, University of Maryland
Otte, Lorraine Tekla	Minn.	P	Painter, Fuban Allen
Ottenberg, Ronald	D.C.	P	Painter, Freddie Paige
Ottinger, Ruben Herschel	D.C.	P	Painter, Kenneth John
B.S. 1949, East Tennessee State College	D.C.	P	
Otto, Clarence Edmund	Mich.	P	
Otto, Inhoff Helen Effried	Mo.	P	
A.B. 1911, University of Cincinnati	D.C.	P	
A.M. in Gov. 1950, The George Washington University	D.C.	P	
Ovalle, Philip Doyle	D.C.	P	
Ovellene, Lucille Thelma	N.H.	P	
Ovenden, Lucille Jane	D.C.	P	
Ovensand, Elsa Catherine	Mt.	P	
Oveston, Thomas Jewelllyn	Ia.	P	
B.M. 1961, Louisiana State University	D.C.	P	

Painter, Margaret Hannah B.S. 1943, Central Missouri State Teachers College	D.C.	Park, Maxine Carol B.S. 1952, American University	Md.
Painter, Richard Elmer B.S. 1951, University of Maryland	D.C.	Park, Yip Ham	Md.
Pakis, Gloria Alexander	N.Y.	Parker, Carlene Louise	Mo.
Palau, Manuel	D.C.	Parker, Charles Hanks B.S. 1942, Worcester Polytechnic Institute	D.C.
Paleologos, Peter Harry	Md.	Parker, Eleanor Butt A.B. 1948, A.M. 1952, University of Maryland	Md.
Paley, David A.B. 1949, LL.B. 1951, New York University	N.Y.	Parker, Francis Elmer B.S. 1925, A.M. 1929, St. Lawrence University	D.C.
Palm, Ronald William B.S. 1952, Virginia Polytechnic Institute	Va.	Parker, George Kenneth A.B. 1949, Bowling Green State University	Ohio
Pallada, Anna Maria	N.Y.	Parker, Harold Curtis	D.C.
Pallansch, Margaret Mary A.B. 1940, Trinity College	Wis.	Parker, James Lewis	Pa.
Palm, William Harry	Va.	Parker, James Walker, Jr.	Md.
Palmasani, Daniel Robert	Md.	Parker, Jane Montgomery	D.C.
Palmer, Barber Clayton, Jr. A.B. 1950, Dartmouth College	Md.	Parker, Lois Proctor A.B. 1949, Washington College	Md.
Palmer, Dana Vern	D.C.	Parker, Norman Elbert	Va.
Palmer, John Gilbert A.B. in Ed. 1950, M.S. 1951, The George Washington University	Md.	Parker, R. Elmo	W.Va.
Palmer, William David B.S. 1944, U. S. Coast Guard Academy	Va.	Parker, Ralph William	Md.
Palmes, Douglas Edward	Va.	Parker, Richard Dale B.S. 1951, The George Washington University	
Palmgard, Robert Norman	N.J.	Parker, Roy Hartford	Mo.
Palmer, Jorge Alejandro	Guatemala	Parker, Russell Lawrence	Pa.
Paloff, Herbert George	N.J.	Parker, Ruth Ann	Va.
Pan, Lan A.B. 1950, Davidson College	D.C.	Parker, Ruth Taylor	Va.
Panagakos, Charles Michael	Mass.	Parker, Sarah Jean	Texas
Panagakos, Gus	Va.	Parker, Thomas G. M.D. 1949, Harvard University	
Pancetta, Robert	N.Y.	Parkes, James Lloyd A.B. 1949, The George Washington University	Md.
Pang, Margaret Fung	Hawaii	Parker, Arthur	D.C.
Panlasi, Carmelo G. B.S. 1952, University of Pennsylvania	Pa.	Parkinson, Robert Leslie	Ind.
Panneton, Jules Robert	Va.	Parkinson, Roger West	Md.
Panzitta, Joseph	N.J.	Parks, Albert Benjamin A.B. 1943, The George Washington University	Md.
Pao, Wen-Nien A.B. 1925, The University of Nanking	China	Parks, Finley James, Jr.	Mass.
Papadopoulos, Nicholas M. B.S. 1951, American University	Greece	Parks, Kendrick Wellman	Va.
Papafrangos, Olympia Beatrice S.	Okla.	Parajinos, Simplicio Cuyno, Jr. A.B. 1951, The George Washington University	Md.
Paparella, Jerry Joseph	Pa.	Parr, Wilma Faith	Va.
Papas, Louis John	Texas	Parr, Alirio Antonio A.B. 1948, A.M. 1952, Cambridge University	Venezuela
Papastefanou, Stelio K.	D.C.	Parrillo, William Joseph B.S.C. 1951, Lovola University	Ill.
Papayianis, Betty May	Calif.	Parrish, Daniel Wilkes, Jr.	Texas
Pappas, Angeline J. A.B. 1947, Salem College	Md.	Parry, James Davidson A.B. 1950, The George Washington University	D.C.
Pappas, Stephen Stavros B.S. 1952, The George Washington University	D.C.	Parry, Wynne David	Va.
Paramkas, Nathalie A.M. 1941, University of Vilnius, Lithuania	D.C.	Parsons, John Allen	Va.
Paraskevass, John Emmanuel	D.C.	Parsons, John Frederick	Md.
Pardee, Arthur Ellsworth, Jr. B.S. 1949, Georgetown University	D.C.	Parsons, Tahmeh Irani	D.C.
Pardo, Isador A.B. 1949, Brooklyn College	Va.	Partington, Allen Venables	Md.
Paris, Charles David	D.C.	Pasamanick, Leonard Daniel	N.Y.
Park, Henry Breckinridge, Jr. A.B. 1949, Tufts College	D.C.	Paschall, Archie Lamar	Ark.
Park, Donald Stuart	Va.	Pastual, Carolina Jimenez A.B. 1948, B.S. 1950, Philippines Women's University	Philippines
Park, Heath John	Calif.	Pasin, Sermet Refik LL.M. 1947, University of Istanbul, Turkey	Va.
Park, Helen Dorothy B.S. 1946, M.S. 1949, The George Washington University	D.C.	Paiko, Joseph Edward	Pa.
Park, Kenneth Lothrop	Md.		

Pasquale, Ernest Bernard	D.C.	Peacock, Harold	DC
Pasquale, Matthew Richard	Pa.	A.B. 1941, Columbia University	Va
Paste, Peter John	Mass.	Peacock, Jack Travis	DC
Pasternak, Andrew	Pa.	Peacock, James Tomlinson	DC
A.B. 1959, University of Pittsburgh		Peake, Evelyn Margaret	DC
Pasternak, Frances Ellis	D.C.	Peake, James Edward	Mass.
A.B. 1950, The George Washington University		Peat, Vivian Charlotte	Aug
Pastrana, Misael	D.C.	Peate, Donald Bruce	DC
Patchan, Michael	Pa.	A.B. 1950, Boston University	DC
Patchan, Steve	Pa.	Peate, Donald Bruce	DC
Pate, Fairy Nell	D.C.	Pearce, Ira Hersey	DC
Patnaude, Edmond Thomas	Va.	A.B. 1951, The George Washington University	DC
B.E.E. 1948, Rensselaer Polytechnic Institute		Pearcy, Klyne Francis	DC
Patnovic, Robert Lee	D.C.	B.B.A. 1950, University of Miami	DC
A.B. 1950, Pennsylvania State College		Pearman, Beverly Wray	DC
Patrick, Francis Henry	Pa.	Pearson, Arthur Stanley	DC
B.S. 1948, U.S. Military Academy		A.B. 1942, Columbia College	DC
Patton, Stanley Fletcher, Jr.	Ohio	Pearson, Elsworth Carl	DC
B.S. 1949, M.S. 1951, The George Washington University		Pearson, Ervin Glen	DC
Patterson, DeWitt McDougal	Tenn.	B.S. 1952, Gallaudet College	DC
B.S. in E.E. 1949, U.S. Naval Academy		Pearson, Gordon William	DC
Patterson, Duane Lester	Ohio	Pearson, Harry Newsome	DC
A.B. 1950, Denison University		B.S. 1948, Mississippi State College	DC
Patterson, Joseph Clarence, Jr.	Va.	Pearson, Heloise Estes	DC
Patterson, Joseph William	Va.	Pearson, Joe Morgan	DC
Patterson, William Howard	Va.	R.S. 1941, Northeastern State College	DC
Patterson Knight, Jennifer Ann	Va.	Pearson, John Henry	DC
Pattishall, Evan G., Jr.	Va.	A.B. 1940, Temple University	DC
Ph.D. 1950, University of Michigan		A.M. 1953, University of Pennsylvania	DC
Pattison, Hubert Allen	Md.	Peavy, Evander Eugene	DC
B.S. 1950, Michigan State College		Peck, Douglas Montgomery	DC
Patton, Arthur Gordon	Va.	Pecot, Rebecca Koonce	DC
A.B. 1946, Yale University		A.B. 1951, The George Washington University	DC
LL.B. 1950, The George Washington University		Pedersen, Frank Alfred	DC
Patton, Hazel Delphine	Ohio	Pederson, Harold Edward	DC
A.B. 1951, New York University		Pederson, James Allen	DC
Paul, Alvin Wilson	N.Y.	A.B. 1951, Macalester College	DC
Paul, Edward	D.C.	Pedern, Remo Mathew	DC
B.S. 1952, Massachusetts Institute of Technology		A.B. 1950, Brooklyn College	DC
Paulsen, Donald LaVerne	Iowa	A.M. 1952, Columbia University	DC
B.C.S. 1947, J.D. 1949, Duke University		Peeler, Carolyn Rae	DC
Paulsen, Sara Jordan	Va.	Pegan, John Robert	DC
Paulson, David	D.C.	B.S. 1950, Washington University	DC
Paulson, Mary Leona	D.C.	Pefer, William Houston	DC
Paulus, Joan Margaret	D.C.	Peimann, Esther Elizabeth	DC
A.B. 1951, University of Utah		Peise, Ethel Byrne	DC
Pauly, Joan Frederick	Mo.	A.B. 1947, Barnard College	DC
Pauzowski, Carl Joseph	N.Y.	A.M. 1950, Columbia University	DC
B.Chem. 1958, Cornell University		Pelikan, Helen Leese	DC
Pavlik, S. Mary	Pa.	Pelikan, Robert Grant	DC
B.S. 1949, A.M. 1950, Columbia University		Pell, Arthur Jack	DC
Payne, Carroll James	Va.	B.S. 1952, The George Washington University	DC
Payne, Claude Alvin	D.C.	Pelletier, Denis Dugin	DC
Payne, Elizabeth Cox	D.C.	Pelletier, Geraldine	DC
Payne, Emily Jeanine	D.C.	Pelmoser, David Joseph	DC
Payne, George William	Va.	A.B. 1951, Wilkes College	DC
Payne, Leonard Hughson, Jr.	D.C.	Pelton, Robert James	DC
Payne, Philip Marshall II	Mass.	Peltzer, Vernon Amos	DC
A.B. 1950, University of Virginia		B.S. 1951, DePaul University	DC
Payne, Robert Compton	Calif.	Pemberton, William Charles	DC
A.B. 1941, San Jose State College		Pence, Carrie Rebecca	DC
Payne, Ruth Klement	Va.	Pence, Grace Alice	DC
Payne, Stanley Roscoe	Md.	Pence, Mary Cary	DC
Payne, Thelma Maxine	Va.	A.B. 1944, Westhampton College	DC
Pazera, Joseph Edward	Va.	Pence, Virgil Lewis	DC
B.S. 1951, Georgetown University		Pendarvis, Robert Thomas	DC
Pazos, Mercedes Felisa	D.C.	Pendergast, Anna Paulina	DC
		Pendergast, Joseph Patrick	DC
		Pennell, Paul Edward	DC

Penney, Walter Francis	D.C.	Peterson, Charles Raymond	Ill.
Pennington, Andrew Meders, Jr.	Va.	Peterson, Darwin Lee	Utah
Pennan, Lola	Miss.	Peterson, Edgar Francis, Jr.	Va.
Perard, Marian Carole	Pa.	Peterson, Glen Douglas	Minn.
Perce, Richard Livingston	Va.	A.B. 1953, University of Minnesota	
Perkins, Edgar Charles	Vt.	Peterson, Harold Emmanuel	D.C.
A.B. 1953, University of Vermont		Peterson, Harvey Wayne	Md.
Peppard, Matthew James	Fla.	A.B. 1952, The George Washington	
Perce, LeGrand Winfield	Pa.	University	
A.B. 1950, The George Washington		Peterson, Hughina	Ohio
University		Peterson, John Malcolm	Kans.
Perez, Alfonso	Colombia	B.S. 1942, A.M. 1947, University of	
Perez, Louis Vincent	Md.	Kansas	
Perfetti, Emile Elmer	N.Y.	Peterson, Margaret Christine	D.C.
Perkins, Cecil Rapp	D.C.	Peterson, Milton Maurice	Va.
Perkins, Fern Harriette	Minn.	B.S. 1940, Central Michigan College	
Perkinson, Mary H. Thompson	Va.	of Education	
Perko, Robert R.	D.C.	M.S. 1942, University of Michigan	
Perna, Louis Robert	D.C.	Peterson, Nad Alma	Utah
A.B. 1950, The George Washington		A.B. 1950, The George Washington	
University		University	
Perrin, Alain William Georges	France	Peterson, Patricia Elaine	Va.
Perrin, Matthew Phillip	D.C.	Peterson, Robert Hilding	Va.
Perrin, Gloriane Aurora	Maine	B.E.E. 1940, University of Minnesota	
Perrin, Joseph Lorain	Texas	Petlansky, Eleanor	Va.
A.B. 1942, Stephen F. Austin State		Petri, Ann Emmons	D.C.
Teachers College		Petrie, Emily Elizabeth	Pa.
Perron, Richard William	Ind.	Petrillo, Robert Francis	D.C.
Perron, Thomas Andrew	Va.	Petrini, Albert Anthony	D.C.
Perron, Virginia Marie	Va.	Petro, Meda Crocker	D.C.
Perron, James Stephen	D.C.	Petruska, Josephine Anne	D.C.
A.B. 1937, Wake Forest College		Pettigrew, Edith W.	S.C.
Petrizza, John	Va.	Pettigrew, George Matthew	Va.
Petry, Beverly	D.C.	Pettigrew, Jamie Louise	D.C.
A.B. 1951, The George Washington		A.B. in Ed. 1947, A.M. in Ed. 1951,	
University		The George Washington University	
Perry, Gisela B.	N.D.	Pettit, Alvin Golderoy, Jr.	Md.
Perry, Joan Frances	N.Y.	Pettit, Charles Albert	Md.
A.B. 1951, Goucher College	D.C.	Pettus, Francis Cornelison	D.C.
Perry, Olive Violet		A.B. 1930, University of Hawaii	
Perry, Stanley Durward	D.C.	A.B. 1951, The George Washington	
Perry, William H.	Okla.	University	
M.D. 1955, Northwestern University	Va.	Petty, Virginia Anne	N.C.
Peschke, Helen Mae		Pewkes, Ralf George	D.C.
Peski, Branko Martin	D.C.	Pfahler, Robert Duvall	Eg.
L.L.B. 1941, L.L.D. 1942, University	D.C.	B.S. M.E. 1948, The George	
of Zuerich, Yugoslavia		Washington University	
Peskind, Sarah Ruth	D.C.	Pfeifer, Joseph William	Md.
A.B. 1950, The George Washington		Pfeiffer, John, Jr.	Ga.
University		A.B. 1951, Wesleyan University	
Petavich, Joseph Francis	Ill.	Pfeiffer, Shirley Marguerite	Va.
Peters, Antonio Dailey	D.C.	Pfanning, James Henry	D.C.
A.B. 1949, Shepherd College	W.Va.	Pfuntner, Carl Herman	D.C.
Peters, Clarence Oswald	W.Va.	A.B. 1948, The George Washington	
Peters, Dorothy Ellen	D.C.	University	
Peters, John Bevier	Va.	Phariss, John William	Okla.
A.B. 1951, University of Oregon		B.S. 1947, M.B.A. 1948, University of	
Peters, Martha Lillian	Va.	Oklahoma	
A.B. 1951, Randolph-Macon Woman's		Phelan, Charles Scott	Va.
College		B.S.E.E. 1949, Pennsylvania State	
Petersen, Charles Ludvig	Va.	College	
B.S. in M.E. 1949, Purdue University		Phelan, Patrick John	Ariz.
Petersen, Richard James	Colo.	Phelph, Warren Francis	Md.
A.B. 1952, St. Olaf College	N.Y.	Phelps, William Wendell	D.C.
Peterson, Stanley Wilhelm		A.B. in Govt. 1948, The George	
A.B. 1942, The George Washington		Washington University	
University		Philips, Phyllis Jane	Md.
Peterson, Charles Clinton	Va.	Philipson, Bruce Glueck	D.C.
		B.C.E. 1948, Catholic University of	
		America	
		A.M. in Govt. 1950, The George	
		Washington University	

Phillips, Betty Ann	Va.	Pineau, Roger	Ma
B.S. 1949, Mary Washington College		A.B. 1942, University of Michigan	Puerto Rico
Phillips, Betty Morris	D.C.	Pineiro, Irda Garcia	D.C.
A.B. 1945, Davis and Elkins College		A.B. 1952, Winthrop College	
Phillips, Clinton A.	Va.	Pinette, Mattie Anna	Mass.
Phillips, Frank DuBose	D.C.	B.S. 1952, American University	
B.S. 1938, A.M. in Ed. 1948, The George Washington University		Pini, Harold Victor	Ma
Phillips, Harriet Sylvia	Md.	A.B. 1940, Georgetown University	
Phillips, Neal Cornelius	D.C.	Pinion, Jack Andrew	Va
Phillips, Raymond Alfred	D.C.	B.S. in B.A. 1938, University of Nebraska	960
A.B. 1951, University of Utah		Pinkard, Jane Ann	Ma
Phillips, Richard Martin	D.C.	Pinkney, William, Jr.	
Phillips, Richard Ross	Tenn.	Pinkham, Richard Collins	
Phillips, Robert Dean	Ala.	B.S. in Chem. Eng. 1948, Northeastern University	D.C.
B.S. 1952, Howard College		Pinkus, Elsa Carol	D.C.
Phillips, Samuel Joseph	Md.	Pino, Edward Charles	
Phipps, James Webster	Fla.	A.B. 1950, Michigan State College	Va
Phipps, John William	Va.	Pinson, Anna H.	Ma
B.S.E.E. 1950, University of New Hampshire		Piper, Jurgen Francis	Ma
Picard, Clarence Fanduward	Tenn.	Pipkin, Patricia Yvonne	D.C.
B.S. 1950, Massachusetts Institute of Technology		Pisani, Shirley Feldman	Fla.
Piccariello, Harry John	N.Y.	Pistone, Joseph Vincent	D.C.
Piccolo, Anthony Ronald	Va.	Pissia, Arthur Byrre	
Pickard, Mildred Pearl	Md.	Pitchford, Leslie Lee, Jr.	
Pickens, George Wilson	D.C.	A.B. 1948, Roanoke College	Va
Pickering, Shirley Leora	R.I.	A.M. in Govt. 1950, The George Washington University	Tenn.
B.S. 1943, Rhode Island University		Pitman, Elmer Clarence	D.C.
Pickett, Jack Milton	Va.	Pitman, Park Ware	Fla.
A.B. in Govt. 1950, The George Washington University		Pittas, John Francis	D.C.
Pickup, Dana Roland	N.Y.	Pittman, Alton Rudolph	Fla.
B.S. 1936, University of Oklahoma		Pittman, Estelle R.	Okla.
Picton, Carol Landis	Md.	Pittman, Henry Byron	Okla.
Piekenbrock, Robert James	Wis.	Pittman, James Neal	
Pierce, John Roderick	D.C.	Pitts, Denver Collyn	
Pierce, Richard Herd	Va.	A.B. in Govt. 1952, The George Washington University	D.C.
Pietila, Phyllis Helen	D.C.	Pizer, Robert Simon	Ma
Pietras, Chester Joseph	Mass.	Pizer, Samuel	
B.S. 1950, The George Washington University		A.B. 1945, The George Washington University	D.C.
Pietras, Regina Beverly	Pa.	Pirrola, Anthony Conrad	N.Y.
Pietach, Audrey Cecilia	N.Y.	Plaisted, Jane	D.C.
A.B. 1948, Cornell University		A.B. 1952, Kenka College	N.H.
Piggott, Anne Marguerite	D.C.	Plank, William Holt	
Pike, Wayne J.	Ohio	Plante, Norman Anthony	
A.B. 1940, Bowling Green State University		A.B. 1950, University of New Hampshire	Iowa College
Pikralindas, Eoripides	Va.	Platt, Frank Leslie	
Pileggi, Joseph	D.C.	Platt, Joan Miller	
Pillot, Jose Celestino	N.Y.	A.B. 1948, The George Washington University	D.C.
Pillote, Robert Lawrence	D.C.	A.M. 1950, Bryn Mawr College	Va.
A.B. 1952, Gettysburg College		Plaza, Julia	
Pillow, David James	Texas	Pletcher, Ralph Weldon	Pa.
B.S. 1950, Texas Christian University		B.S. 1948, University of Maryland	Fla.
Pilson, Benjamin Franklin	D.C.	Pliska, Leonard Peter	
Pileer, Geraldine Fogel	D.C.	Plotkin, Leonard	
Pinch, Anita Porto	N.Y.	B.F.E. 1952, The George Washington University	Iowa Ma
A.B. 1952, The George Washington University		Plouffe, Claire Lucille	
Pinch, Edward Thomas	Fla.	Plumb, Rosemary Dengler	
Pincus, Arthur	Md.	A.B. 1944, University of Rochester	
A.B. in Govt. 1948, The George Washington University		A.M. in Govt. 1948, The George Washington University	D.C.
Pincus, Saul	N.Y.	Plumley, Arvern Richard	D.C.
B.S. 1941, College of the City of New York		Plummer, Harry Custer	Ma
Pincus, William	Md.	A.B. 1950, Ohio University	
A.B. 1941, Brooklyn College		Plyer, Betty Lou Robinson	
A.M. 1948, American University		A.B. 1951, The George Washington University	
Pindall, William Hamilton	D.C.		

Porter, Cranford Oliver, Jr.	Md.	Porter, Milda Mae	Va.
B.S. 1943, High Point College		Porter, Ilean Robinson	Md.
Porter, Jack Pat	W Va	Porter, Thomas Craig	D.C.
B.S. 1940, West Virginia University		Porter, William Matthews	Conn.
Porter, Warren Clayton	Md.	A.B. 1938, University of Connecticut	
B.S. 1941, Augustana College	D.C.	Porterfield, Marguerite K.	Va.
Porter, Beverly Katherine	Pa.	Porterfield, Robert James II	Va.
Porter, William Lindsay	Md.	Poston, Fredric Carl	D.C.
B.S. 1936, U.S. Naval Academy		Posto, Ralph Anthony	N.Y.
Porter, Jean Cameron	Va.	A.B. 1930, The George Washington University	
Porter, Stephen	Pa.	Posada, Mario	D.C.
Porter, Peter John	N.Y.	Posner, Heinz	D.C.
B.S. 1938, Massachusetts Institute of Technology		Posin, Benjamin William	D.C.
Porter, Eugene	D.C.	Posnansky, Rosalie Lamelle	Md.
Porter, Barth	Ill.	Posner, Margery Snowden	Md.
B.S. 1950, M.S. 1951, Illinois Institute of Technology		A.B. 1944, University of Michigan	
Porter, John Ray	D.C.	A.M. 1958, American University	Mo.
Porter and Robert Van Buren	Miss.	Pospischal, Gerald	
A.B. 1928, Emory University		B.S. 1948, University of Minnesota	Pa.
LL.B. 1931, Harvard Law School		Posta, John Joseph	D.C.
Porter, Albert	D.C.	Postal, Evelyn Michael	D.C.
Porter, Jerry	D.C.	Potter, Margaret Lane	Tenn.
Porter, Clarence Foster, Jr.	Md.	Potter, Thomas Kelly, Jr.	Va.
B.S. 1946, U.S. Naval Academy		Potts, Celsine Gwennette	Va.
Porter, Mary Robilee	Pa.	Potts, Dale Everett	
Porter, Vivian Levy	N.Y.	B.S. 1949, East Illinois State College	Pa.
A.B. 1952, The George Washington University		Potts, Edward Amiel	
Porter, Robert William	Md.	A.B. 1940, University of Michigan	Miss.
B.S. 1950, U.S. Merchant Marine Academy		Potts, Edwin Hammond	
Porter, Harley Linwood	Maine	A.B. 1931, University of Mississippi	
B.S. 1942, University of Michigan		A.M. 1939, Colorado State College of Education	
M.S. 1948, The George Washington University		Potts, William Edward	Va.
Porter, Peggy Ann	D.C.	B.S. 1952, University of Maryland	
Porter, Fritz Lon	Colo.	Potlauer, Betty Ann	Md.
A.B. 1951, University of Colorado		Poulain, Simone Antoinette	Ga.
Porter, Mildred Elaine	Pa.	Pouch, Loren Boyd	Iowa
Porter, W. R.	D.C.	LL.B. 1948, National University	
A.M. 1940, Columbia University		Powell, Clyde C., Jr.	D.C.
Porter, Curtis W., Jr.	Iowa	B.S. 1950, Alabama Polytechnic Institute	
Porter, Robert Smallwood	D.C.	Powell, Ellen Ann	D.C.
A.B. 1938, The George Washington University		Powell, John Frederic	Md.
Porter, Douglas Arthur	Va.	Powell, John Theodore	Wash.
B.S. 1951, University of Maryland		A.B. 1936, University of Washington	
Porter, Nancy Beville	N.Y.	Powell, Sally Lou	D.C.
Porter, Fannie Parrchild	Md.	A.B. 1932, Valdosta State College	
Porter, James Sterling	Md.	Powell, William Oscar, Jr.	Tenn.
Porter, Mary Vernables	Va.	B.S. 1937, University of Chattanooga	
Porter, Patricia Evelyn	D.C.	Powers, Gertrude Loretta	Iowa
B.S. in Bus. F.A. 1940, The George Washington University		Powers, Irene Corgan	Wis.
Porter, William Lawrence	D.C.	Prater, George Sam	Va.
Porter, Robert David	Va.	Prash, John Stanley	N.Y.
Porter, William Rowell	D.C.	Prada, Edward	Va.
Porter, Robert M. Lael	D.C.	Praterston, Robert Leslie	Md.
B.S. M.E. 1915, Rensselaer Polytechnic Institute		B.S. 1931, Catholic University of America	
A.M. 1940, Columbia University		Prather, Charles John	D.C.
Porter, Bennett Allen, Jr.	Md.	Pratt, Curtis Robert	Ill.
Porter, Bonnie Jay	Okla.	A.B. 1930, The George Washington University	
Porter, Grace Elaine	D.C.	Praught, Priscilla Ann	Mass.
Porter, James B.	D.C.	Prehn, Elanor Pauson	Md.
Porter, John Musante	Va.	A.B. 1946, Cornell University	
Porter, Mary Jacqueline	Va.	Prehn, Richmond Talbot	Md.
A.B. 1949, Mary Washington College		M.D. 1947, Long Island College of Medicine	N.Y.
		Preiser, Herman Solomon	
		B.S. 1940, Webb Institute of Naval Architecture	

Prencipe, Nicholas Vincent B.S. 1950, The George Washington University	D.C.	Pruitt, Lincoln Darrell B.S. 1950, Kansas State Teachers College	Kan.
Prescott, Charles A.B. 1940, University of Miami	Va.	Prusch, Stanley Prussing, Marjorie Maughlin	Md. Va. D.C.
Pressman, Joyce Ann Presson, Homer Kent A.B. 1939, Texas Technological College	D.C. Texas	Psaltis, Edmond Gregory Psaltis, Mary Psathas, Dorothy A.B. 1948, Connecticut College	D.C. Conn. Md. N.C.
Preston, George Rodger Preston, Henrietta Louise Preston, Lenais Todd Preston, Martha Claudia	N.J. Md. D.C. D.C.	Puckett, George Elbert Puett, William Nelson Pugh, Donald Wagner Pugh, Harry Marvin B.S. in B.A. 1937, Ohio State University	Tenn. D.C. Va.
Prete, Lucy Theresa Preusch, Odessa Dee B.S. 1946, Kansas State College	D.C. D.C.	Pugh, Lillian Elizabeth Pugliese, Vincent Augustus Pulley, Robert Earl B.S. 1917, Jamestown College	Va. D.C. Md.
Price, Archie Boyce Price, Charles Watson B.S. 1935, M.S. 1942, Syracuse University	D.C. D.C.	Pully, Lucille Pulvart, Charles Ferencz Pulver, Bernardo Pundeff, Marin Vassileff A.B. 1949, University of Southern California	D.C. D.C. Ark. Va.
Price, Charles William Price, Curtis Leo Price, Edward James Price, Elsa Louise Price, George Bradley Price, Hoyt Glenn A.B. 1941, The George Washington University	Md. Calif. N.Y. N.Y. Va. Va.	Punga, Valdemars Purcell, Mary Elizabeth Purdy, Ramon Tison Pursloy, Christine Ethel Purvis, Curtis Carlisle Pushkarski, Anna Maria Ph.D. 1944, University of Vienna	Austria Md. Ky.
Price, John Davis B.S. 1942, U. S. Naval Academy	Tenn.	Putman, Guy Hamilton, Jr. Putnam, Harriet Russell A.B. 1945, Smith College	Md. Va. Md.
Price, Mary Simms Price, Minerva Mary Price, Roger Carson Price, Roy Warren Price, Ruth Hitchcock Price, Walter Leroy Price, Zabeth Miller Prieto, Ana Luisa A.B. 1944, University of Puerto Rico	D.C. D.C. D.C. Va. Md. Md. Puerto Rico	Putney, Walter Gilliam, Jr. Pyle, Anita Louise Pyle, Leland Alonzo Pyle, Paul Wofindin, Jr. A.B. 1941, West Virginia Wesleyan College	Va. W.Va.
Prill, George Cunningham B. Aero Eng. 1943, New York University	Va.	Pyles, Carol Lee	N.J. Va.
Prince, Jack Kimball A.B. 1940, University of California at Los Angeles	Va.	Q	
Prisch, Robert Mark Pritchard, Maurice Gilbert Pritchard, Robert Linton Probit, Richard Harvey Procter, Donald Garfield B.S. and A.B. 1953, University of Florida	D.C. N.Y. Va. Md. R.I.	Quaglia, Carl Anthony Quant, David Worthington A.B. 1949, Colgate University A.M. in Pub. Adm. 1952, The George Washington University	D.C. Md. N.Y. Conn.
Procter, Arthur Edwin Proctor, Patricia Lee Projector, Dorothy South A.B. 1943, Southwestern University A.M. 1951, The George Washington University	Iowa D.C. Md.	Quarrelle, Richard Edward Quast, Walter Fredrick Quack, Robert Thomas Quarley, Harold D. Quill, John Joseph A.B. 1948, Ohio Wesleyan University	Md. Va.
Prunk, Richard John Propst, Ruth Doreen B.S. 1950, Maryland State Teachers College	N.Y. D.C.	Quinlan, Ruth Elizabeth Quinley, Hattie Gibby B.S. 1943, Radford College Quinlisk, Virginia Margaret Quinn, Barbara Lee Quinn, Brent Murdock Quinn, Francis Russell A.B. 1950, Catholic University of America	Md. N.C. D.C.
Proschan, Edna Mae Protas, Robert Bernard Protonotarios, Stylianos Demetrios B.S. 1951, Wagner College A.M. 1951, The George Washington University	D.C. D.C. Greece	Quinn, Gertrude Patricia B.S. 1945, Fordham University M.S. 1948, Rochester University	N.C. Puerto Rico
Proudley, George Erwin, Jr. B.S. 1948, University of Maryland	D.C.	Quinn, James Leland III Quinn, Teresa Marie Quinones, Angelita Martinez A.B. 1934, College of St. Catherine	Puerto Rico
Pueferti, Helmut	D.C.		

Quisenberry, John Ascum A.B. 1948, Harvard University	Ill.	Randels, Helen Wyckoff	Md.
Quisenberry, Mary Frances	Md.	Randell, Eleanor Fuller	Md.
Qureshi, Bushra A.B. 1949, A.M. 1951, Islamic College, Pakistan	Md.	Randol, William Green	Ill.
Qureshi, Moeen A. A.B. 1951, A.M. 1952, Punjab University, Pakistan	Pakistan	Randolph, Jennings	D.C.
		Randolph, John Lewis	Va.
		A.B. 1951, The George Washington University	
		Randolph, Richard Eugene	Mich
		B.S. 1948, Michigan College of Mining and Technology	
		Rane, Chairman	Va.
		A.B. 1948, University of Arkansas	
		Rangoon, Ellen Magda	Conn.
		Rangstrom, Nancy	N.Y.
		Rankin, Joseph Jeffrey	Va.
		A.B. 1948, University of Pittsburgh	
		Rankin, Roberta Elizabeth	Tenn.
		Rankin, William Walker	N.Y.
		Ranow, Maxine Estaire	D.C.
		Rapacke, Edward W.	N.Y.
		Rapp, Eleanor Elizabeth	D.C.
		Rapp, Vera Louise	Pa.
		Rappaport, Bernard Raymond	Ill.
		B.S. 1952, The George Washington University	
		Rapport, Leonard Arnold	D.C.
		A.B. 1945, University of North Carolina	
		Rapport, Michael Brandies	D.C.
		Rarig, Lloyd Corneal	Md.
		A.B. 1950, University of Alabama	
		Raring, Frederick William	Va.
		B.S. 1949, Lehigh University	
		Rasch, William Henry	Md.
		Rash, Norman Eldridge	D.C.
		A.B. 1950, William and Mary College	
		Rasmussen, Frank Joseph	Md.
		B.S. in M.E. 1949, University of Illinois	
		Rast, Robert	Texas
		A.B. 1950, University of Texas	
		Ratbone, H. Collin	D.C.
		Ratbone, Walter Cox	D.C.
		I.L.B. 1945, Georgetown University	
		Rathens, Claartje Helene	D.C.
		Ratowsky, Max	D.C.
		Raum, Jack Ronald	Va.
		Raum, Jean	D.C.
		A.M. 1941, New York University	
		Rassash, Joseph Edward	Va.
		B.M.E., B.E.E. 1941, Ohio State University	
		Ravish, Bernard Carl	Pa.
		Rawlings, Joseph Edwin, Jr.	D.C.
		A.B. 1950, The George Washington University	
		Ray, Donald Page	Va.
		A.B. 1941, University of Colorado	
		A.M. 1947, The George Washington University	
		Raya, A. Leon Rodlaue	D.C.
		Ray, Leonard Louis	D.C.
		Raymond, Barbara June	Mass
		B.S. 1947, The George Washington University	
		Raymond, Carl Allen, Jr.	Va.
		A.B. 1941, B.C.S. 1949, Dartmouth College	
		Raymond, Earl Alfred	Va.
		Raymond, Gene Ford	Va.
		Raymond, Mark Bradford	Md.
		B.S. 1951, University of Maryland	
		Raykovich, Donald Robert	Va.
		Raykovich, Patricia O'Hare	Va.
		A.B. 1952, Barnard College	
Rabache, Claude Michel	D.C.		
Racca, Carmine William	R.I.		
Rachis, Irving Melvin	Mass.		
A.B. 1951, West Liberty State College			
Rackowski, Chester John	N.Y.		
A.B. 1948, Syracuse University			
Rackowski, Marcelle Gloria	Pa.		
Radsbaugh, Earl Lee	Md.		
Raddcliffe, Keith Benson, Jr.	Md.		
A.B. 1951, Western Maryland College			
Rader, Alice Ellen	Va.		
B.S. 1948, Madison College			
Radko, Joseph	Pa.		
A.B. 1950, Wilkes College			
Radwan, Joe Ayoub, Jr.	D.C.		
Raffelt, Edward James	Md.		
B.S. 1949, University of Scranton			
Rafferty, Raymond Benedict	N.Y.		
Raffner, Martin	N.Y.		
A.B. 1934, New York University			
Rageot, Roger Jacques	D.C.		
Rahle, Frederick Joseph, Jr.	Pa.		
B.S. 1948, A.B. 1948, University of Rochester			
Raibourn, Charles Nathaniel	D.C.		
Raines, Paul Ira	D.C.		
Railey, Benajah Leroy	Va.		
B.S. 1941, Georgia Institute of Technology			
Railey, Samuel Charles	Va.		
B.S. 1946, Virginia Polytechnic Institute			
Raives, Marilyn Klug	D.C.		
A.B. 1949, Connecticut College			
Rajapatirana, Don Siripala	D.C.		
Rajapatirana, Padma	D.C.		
Rakha, Youssef Behgat	D.C.		
A.B. 1951, The George Washington University			
Raley, Anna Loretta	Ark.		
Ralph, Richard Lawrence	Md.		
Ramey, John Lynwood	Va.		
Ramey, John Wyatt	D.C.		
Ramos, James Mariano	Va.		
Ramsay, Richard Fay	Md.		
Ramsey, Dale Elizabeth	Mich		
A.B. 1950, A.M. 1951, University of Michigan			
Ramsey, Edythe Ellen	Pa.		
Ramsdell, B. Ross Grude	Va.		
Rand, Harold	D.C.		
Randall, Frederick Crawford	Md.		
A.B. 1948, University of Omaha			
Randall, John Deshon	D.C.		
B.C.F. 1941, The George Washington University			
Randall, Ruth Hochheimer	D.C.		
A.B. 1951, Swarthmore College			
Randall, Walter John	Va.		

Raywid, Mary Anne	D.C.	Reid, Ann Madison	D.C.
A.B. 1949, University of North Carolina		Reid, Jack Dickey	MD
A.M. 1950, University of Illinois		B.S. 1950, Maryville College	MD
Read, Floyd M., Jr.	MD.	Reid, James Stone	VA
B.S. in Ed. 1952, University of Florida		Reid, Joseph Bernard	MD
Ready, Eleanor Margaret	N.Y.	A.B. in Ed. 1950, A.M. in Ed. 1952,	
Reagan, Ann Louise	D.C.	The George Washington University	
Reagan, Darrin Francis, Jr.	D.C.	Reid, Joseph Bernard	
A.B. in Govt. 1951, The George		A.B. 1949, Washington Missionary	D.C.
Washington University		College	VA
Reagan, Thomas Joan	D.C.	Reid, Mary Louise	VA
Reardon, Daniel Joseph	N.Y.	Reid, Robert David	PA
B.S. 1947, College of the Holy Cross		Reidy, John Cornelius, Jr.	
M.S. 1950, New York State College		Reidy, Mary Elizabeth	
Reardon, James Gavin	Mass.	A.B. 1949, Marywood College	
A.B. 1950, College of the Holy Cross		A.M. 1951, Catholic University of	
Reardon, Leona Helen	Iowa	America	
B.S. 1949, Iowa State College		Reidy, Henry Harold, Jr.	
Reaves, Henry Grady, Jr.	Ga.	Reilly, Helen Louise	
B.S. 1949, U. S. Naval Academy		Reilly, Martin Lawrence	
Reback, William	D.C.	B.S. 1950, Oregon State College	
L.L.B. 1951, The George Washington		Reiner, Anita Ostrowsky	VA
University		Reinart, Robert Wright	
Reber, Earl Edward	D.C.	Reinart, Franklin Widman	D.C.
Reeber, Jaye Thureasa	N.J.	A.B. 1951, Temple University	MD
Rector, Alfred Rozier	D.C.	Reinze, Eva	OR
L.L.B. 1952, American University		Reinzel, Malcolm Francis	
Reidl, Patricia Carol	Va.	Reinwald, Lewis T.	
Redden, Miller Stuart, Jr.	Va.	A.B. 1947, Ohio University	Ind
Redenius, Josephine Louisa	N.J.	A.M. 1949, Clark University	D.C.
Redler, Welfred Morton	MD.	Reiter, Elaine Mary	
Redmond, Joseph C., Jr.	MD.	Reith, John Langan	D.C.
B.S.E. 1944, Tufts College		A.B. 1947, University of Wisconsin	D.C.
B.E.E. 1948, The George Washington		Reither, Wayne Cassin	
University		Reitler, Henry Louis	MD
Redmond, Lucille Elizabeth	S.D.	A.B. 1942, L.L.B. 1947, Vanderbilt	
Redner, Margaret Kathi Adele	N.J.	University	
Reed, Fitzgerald Graham	Va.	Reitman, Morton	
Reed, George Robert	Va.	A.B. 1941, Pennsylvania College	N.J.
A.B. 1950, Lafayette College		M.S. 1950, University of Kentucky	
Reed, Gladys Louise	D.C.	Reitman, Robert Stephen	MD
B.S. 1944, Wilson Teachers College		B.S. 1951, The George Washington	
Reed, John Joseph	Ark.	University	
B.S. 1941, University of Missouri		Reitz, Spencer	
M.S. 1942, University of Arkansas		B.S. 1941, University of Michigan	
Reed, Margaret Murchison	D.C.	M.S. 1948, Massachusetts Institute of	Mass
Reed, Mary Louise	Va.	Technology	VA
Reed, Robert Hammond	Colo.	Reller, Othmar Joseph	
Reed, Shirley Patricia	Va.	Remick, Janice	
Rees, John James	Colo.	Remington, Ann M.	VA
B.S. 1944, University of Wyoming		A.B. 1948, Huntington College	
Reese, Dorothea Constance Piver	Calif.	Remsburg, John Everett	PA
A.B. 1950, The George Washington		B.S. 1946, University of Virginia	D.C.
University		Remshare, Nellie Louise	PA
Reese, James Conniff	D.C.	Remsa, Norma Ruth	
Reeside, Gloria Bolling	D.C.	Remsh, Bernadette Rita	PA
Reeves, Robert Aswell	MD.	Renfro, Julian Carroll	PA
A.B. 1950, University of Iowa		L.L.B. 1951, University of Michigan	MD
Regan, John Vincent	D.C.	Renfro, Ray Homer	
B.S. in E.F. 1950, Tufts College		Renick, Martha Miller	Ind
Rees, John Timothy	MD.	Renk, Richard John	
Reeria, Frank	MD.	B.S. 1950, Iowa State College	
Reid, Robert	D.C.	Reno, Raymond Howard	PA
Reich, Joseph Daniel	D.C.	A.B. 1950, A.M. 1951, The George	VA
Reich, Norma Marian	D.C.	Washington University	D.C.
Reichert, Earl Theodore	Va.	Rentos, Pantelis George	VA
B.S. 1940, Ohio State University		Renx, Henry Augustus III	
Reichow, Estelle Vernon	D.C.	Repass, Marion Virginia	
Reid, Alexander Blann	MD.	Repp, Joan McIntyre	D.C.
A.B. 1950, The George Washington		B.S. 1951, New York State Teachers	
University		College, Oswego	
Reid, Anne Livingston	Va.	Reque, Robert Russell	

Reque, Rose Bertha	D.C.	Richardson, James Pascal	Va.
Reisen, John Jerome	D.C.	Richardson, Laverne Helen	Calif.
Reisnick, Leroy David	D.C.	Richardson, Ralph Dan	D.C.
B.S. 1951, Wilson Teachers College		Richardson, Robert Owen	Va.
Retzlaff, Ralph Herbert	D.C.	LL.B. 1949, Denney College	
A.B. 1952, Cornell University		Richardson, Thomas Totten	Va.
Reas, Max Louis, Jr.	Md.	LL.B. 1950, The George Washington	
Rey, Edwin D.	N.Y.	University	
Rey, William Charles	D.C.	Richtich, Edward	Mass.
Reynier, Anna Rachael	D.C.	B.S. 1950, Georgetown University	
Reynard, Alan Mark	D.C.	Richman, Alice Janet	D.C.
Reynolds, George Richard	Wash.	Richman, Donald William	Canada
B.S. 1946, U. S. Coast Guard Academy		Richmond, Alfred Wright	Md.
Reynolds, James Edwin	Md.	Richmond, Edward Leon	Mass.
Reynolds, John Francis	Conn.	B.S. 1948, A.M. 1949, Boston College	
A.B. 1951, Wesleyan University		Richmond, Ros George	Va.
Reynolds, Sam Fielder, Jr.	Va.	Richter, Donald Harvey	D.C.
A.M. 1949, University of South Carolina		Richter, Marlene Holland	D.C.
Rhame, Richard Coleman	N.Y.	Rickers, Ruth Anna Emalie	N.Y.
A.B. 1950, Princeton University		A.B. 1948, University of Rochester	
Rhinehart, Grant Norman	Va.	Ricketts, Claude Vernon	Mo.
Rhoads, John Charles	Pa.	B.S. 1929, U.S. Naval Academy	
B.S. 1952, St. Francis College, Pa.		Ricketts, Noble George	D.C.
Rhodes, Eric Foster	Va.	B.S. 1920, U.S. Coast Guard Academy	
A.B. in Ed. 1950, A.M. in Ed 1952		A.B. 1950, The George Washington	
The George Washington University		University	
Rhodes, George Presley	D.C.	Riddle, James	Pa.
Rhodes, James Robinson	Md.	Riddles, Alvin Joseph	Pa.
Rhodes, Robert Winters	D.C.	B.E.E. 1949, Catholic University	
Rhy, Charles Thomas	D.C.	of America	
Ribera, Roger	D.C.	Riddles, Marian Teresa	Pa.
Rice, Sally Anne	D.C.	Rider, Jean Graham	W.Va.
Rice, Carol Gougling	D.C.	A.B. 1949, Shepherd College	
Rice, Charles Fenton, Jr.	D.C.	Ridgeway, Jesse Edward	D.C.
Rice, Donald Harvey	D.C.	A.B. 1946, The George Washington	
Rice, Edith Williams	D.C.	University	
Rice, Geraldine G.	Ill.	Ridyard, Lorna Ann	N.J.
Rice, Gertrude Bruce	Va.	Rienken, Richard Charles	Ohio
Rice, John Lalor	Vt.	A.B. in Govt. 1952, The George	
Rice, Peter Paul	D.C.	Washington University	
B.S. 1951, Pennsylvania State Teachers		Riegner, Nena Nettie	D.C.
College, Mansfield		Riehl, Thomas Hooper	Pa.
Rice, Robert Wilson	Va.	Ries, Francis Xavier	D.C.
Rice, Vincent Russell	Md.	Ries, Martin Frank, Jr.	Md.
Rice, Donald Jenkins	Md.	A.B. 1950, American University	
Rice, Edythe Parsons	Va.	Riese, Roland	Va.
Rice, Harold Watterson	N.Y.	B.S. 1947, U.S. Naval Academy	
Rice, Peter Michael	D.C.	Riggs, Joanne	Okla.
Rice, Richard Bridge	Md.	A.B. 1942, Radcliffe College	
A.B. 1952, University of California at		Riggs, Robert Meldrum	Italy
Los Angeles		Rigney, Eleanor	Va.
Rickett, Evelyn Clarice	Md.	A.B. 1950, Women's College of the	
Rickards, Burton Morgan	Va.	University of North Carolina	
Rickards, Helen May Wheeler		Rigtrup, Robert Paul	Md.
A.B. 1951, The George Washington		A.B. 1949, A.M. 1952, University	
University		of Idaho	
Rickards, John Lame	Calif.	Riker, Robert Peter	N.J.
Rickards, Joseph William	Ky.	B.S. 1951, Villanova College	
Rickards, Lois Compton	Va.	Riley, Donald Joseph	N.Y.
Rickard, Maurice Duane	Md.	Riley, Frederic Delano, Jr.	Va.
Rickard, Shirley Howarth	D.C.	B.S. 1952, Massachusetts Institute	
A.B. 1951, The George Washington		of Technology	
University		Riley, Helen Irene	D.C.
Rickards, William Robert	D.C.	Riley, John Edwin	D.C.
A.B. 1951, Bennett College		B.S. 1951, Wilson Teachers College	
Rickardson, Howard Robertson	Va.	Riley, Vincent J.	N.J.
A.M. 1927, Elon College		A.B. 1950, Rutgers University	
A.M. 1928, William and Mary College		Riley, Wallace Don	Mich.
Rickardson, James Augustine	D.C.	Ph.B. 1946, University of Chicago	
A.B. 1952, The George Washington		B.B.A. 1949, M.B.A. 1952,	
University		LL.B. 1952, University of Michigan	
		Rill, John Columbus, Jr.	D.C.

Rinaldi, Charles Edward	D.C.	Roberts, B. Wesley, Jr.	D.C.
Rinaldi, Frances Rose	Md.	Roberts, Berthel Leonard	Over
B.S. 1951, Wilson Teachers College		Roberts, Carol Andrews	Md.
Rinehart, Albert Walton	Md.	Roberts, Elliott Norman	D.C.
B.Eng. 1940, Catholic University of America		A.B. 1950, West Virginia University	Va.
Ring, Carl Ewald	Va.	Roberts, Francis Marion	
B.S. 1950, Madison College		B.S. 1952, Northwestern University	Calif.
Ring, Donald Francis	N.Y.	Roberts, Gerald Earl	D.C.
Rinker, Ed	D.C.	Roberts, Herman Edwin, Jr.	N.Y.
Rini, William Anthony	N.Y.	Roberts, Howard Richard	Ind.
Rinick, Wayne Joseph	D.C.	Roberts, James Alfred	D.C.
Rinne, Oivo Michael	Colo.	Roberts, John Raymond	
Riordan, Francis	Va.	Roberts, June Burcham	
B.S. 1933, Tufts College		A.B. 1934, Pennsylvania State College	Pa.
Rios, Franklin	D.C.	M.L. 1938, University of Pittsburgh	Va.
Rios-Lugo, Miguel Juan	Puerto Rico	Roberts, Lincoln Edwin	D.C.
A.B. 1951, The George Washington University		Roberts, Mary Kendall	
Ripper, Edmund	D.C.	Roberts, Mary Maritima	
Riskin, Aaron	Md.	A.B. 1950, The George Washington University	Ind.
Rissley, Ralph Emerson	D.C.	Roberts, Richard Campbell	Tenn.
Rissler, Robert Lucaine	W.Va.	Roberts, Roy Marvin	
A.B. 1942, Shepherd College		B.S. 1940, University of Tennessee	D.C.
Ritchie, Calvin Donald	Va.	Roberts, Sherman Harry	
Ritchie, Fred Monks	Md.	B.S. 1951, Illinois Institute of Technology	D.C.
B.M.E. 1940, The George Washington University		Roberts, Thomas Arthur	D.C.
Ritchie, Mary Nell	Md.	Roberts, Ann deBazo	
Ritchie, Wilbur Vernon	Va.	A.B. 1951, Pennsylvania College for Women	Va.
Rutter, James Francis, Jr.	Va.	Robertson, Charles Alfred	Md.
Rutter, Mamie Jane	Okla.	Robertson, David Justin	Pa.
A.B. 1942, Central State Teachers College, Edmond		Robertson, Lawson Joseph	
Ritterpusch, Irvin John	Md.	B.S. 1951, University of Pennsylvania	Mass.
A.B. 1950, University of Maryland		Robertson, Malcolm Higgins	
Rittmann, Dean Vincent		A.B. 1948, University of Minnesota	
Rittue, John Andrew	Texas	A.M. 1951, The George Washington University	Va.
Ritzman, Elmer Roland	D.C.	Robertson, Robert Lynn	D.C.
A.B. 1950, Houghton College,	Va.	A.B. 1951, Shepherd College	
A.M. 1951, University of Chicago		Robertson, Robert Stanley	Md.
Rivara, George Leonard	N.Y.	B.S. 1905, U.S. Naval Academy	Va.
A.B. 1952, Syracuse University		Robey, Dorothy Ellen	D.C.
Rivas, Luis Rene	Fla.	Robey, Paul Anderson, Jr.	N.Y.
Rivera, Albert	D.C.	Robey, Regina Richards	
B.S. 1952, American University		Robinson, Alvin	
Rivera, Rolando Del Sol	Cuba	B.S. 1927, U.S. Naval Academy	Va.
Rivero, Mary Lynn	La.	J.D. 1932, New York University	
Rivoire, Jeanne Louise	Ill.	Robinson, Arlene Burt	
Roamer, James Hahan, Jr.	D.C.	B.S. 1938, Michigan State Normal	Va.
B.C.E. 1950, J.D. 1952, The George Washington University		M.M. 1947, University of Michigan	
Roane, Melvin Chester	Md.	Robinson, Charles Augustus, Jr.	Va.
Robarge, Charles Kendal	Minn.	B.S.E.E. 1950, University of Virginia	D.C.
Robb, James Lawrence	Va.	Robinson, Earl Howard	D.C.
Robb, James Richard	Calif.	Robinson, Frank Samuel	
Robbins, David	Md.	Robinson, Geneva Standley	Md.
Robbins, David	N.Y.	A.B. 1951, The George Washington University	
B.E.E. 1950, College of the City of New York		Robinson, Guy Harold, Jr.	
Robbins, Frank Edward, Jr.	D.C.	A.B. 1952, The George Washington University	Colo.
LL.B. 1944, Rensselaer Polytechnic Institute		Robinson, Harold Leroy	Pa.
Robbins, Maurice James	Va.	Robinson, Harriet May	Ill.
Robbins, May Naomi	Fla.	A.B. 1941, Wilson College	Okla.
Robel, Mary Ellen	Md.	Robinson, Hayes Graham	Ill.
A.B. 1952, The George Washington University		Robinson, James Arthur	N.C.
Robel, Raymond B.	Md.	Robinson, Julius Louis	
Roberson, Stanley Leroy	W.Va.	B.S. 1944, University of Illinois	
Roberson, William Donald	D.C.	Robinson, Leroy	Md.
B.S. 1951, The George Washington University		B.S. 1950, LL.B. 1951, Wake Forest College	
		Robinson, Owen Everett	

Robinson, Robert Arthur B.S. 1939, University of Chicago	D.C.	Rogers, Margaret Agnew	D.C.
A.M. 1951, University of Pennsylvania		Rogers, Marion George	D.C.
Robinson, Robert Strother	Va.	A.B. 1926, Fairmount State College	
B.S. 1949, The George Washington University		Ed.M. 1927, University of Pittsburgh	
Robinson, Roland Robert	Va.	Rogers, Michael Edward	D.C.
Robinson, Tom Witten	Calif.	B.S. 1948, Columbia University	
A.B. 1949, Occidental College		Rogers, Paul Van Velsor, Jr.	Va.
Robinson, Warren Clayton	D.C.	Rogers, Preston Charles, Jr.	Md.
Robinson, Edith E. Vick	Md.	A.B. 1949, Johns Hopkins University	
Robinson, Jean Emmalee	Pa.	Rogers, Robert Kenneth	Ga.
Robuscher, Jonas Bondi, Jr.	D.C.	Rogers, Sally Tillet	D.C.
A.B. 1942, Brown University		Rogers, Thomas Alphonso	Md.
J.D. 1948, The George Washington University		Roghmans, Leo John	D.C.
Roblee, Dana Bush	D.C.	A.B. 1952, Yale University	D.C.
B.S. 1927, St. Bonaventure's College		Roginski, Edward Eugene	Hawaii
M.S. 1942, Albany State Teachers College		Rohling, Frederick William	
Robson, John Theodore	Wash.	A.B. 1950, Yale University	
A.B. 1937, B.S. 1938, University of Washington		Rohling, Joan Halford	Hawaii
M.D. 1942, University of Oregon		Rohls, Derrill Conway	D.C.
M.S. 1946, University of Minnesota		Roohn, Arlin Fwing	Pa.
Roche, James Francis	Va.	A.B. 1952, Lockman College	
B.S. 1941, Rhode Island State College		Rolander, Robert Dale	Kans.
Rodges, Robert Kendall	Va.	B.S. 1950, Colorado University	
Rodmes, Blanche Dwyer	Md.	Rolle, Preston Howell	Va.
A.M. 1941, Columbia University		B.S. 1942, University of New Hampshire	
Roescheller, Marlie Wallace	D.C.	Rolinec, Rudolph Valentine	Pa.
Rockowitz, Jerome Bernard	N.Y.	B.S. 1949, University of Pittsburgh	
B.F.E. 1950, The George Washington University		Roller, Frank Cramer	D.C.
Rodden, Robert Gerald	Va.	B.S. 1949, University of Arizona	
A.B. 1944, University of Pittsburgh		Rollins, Nancy Camden	D.C.
A.M. 1949, American University		Rollins, Wilma Gene	Tenn.
Roddy, Helen Frances	D.C.	Rolink, Robert Franklin	D.C.
Roddy, Joan Charles	D.C.	A.B. 1952, The George Washington University	
Roddy, Norman Joseph	D.C.	Rolph, John Fletcher III	Md.
Rodt, Alex	Pa.	Romanov, Ivan Dmitrievich	D.C.
Rodgers, Anne Louise	Va.	Romansky, George Joseph	Pa.
Rodgers, Darrell Elmer	D.C.	Rombouts, Robert Marvin	Mich.
Rodgers, David Arthur	D.C.	A.B. 1951, Michigan State College	
Rodgers, Elizabeth Bertha	Pa.	Romeo, Carmel Latell	Va.
A.B. 1948, Smith College		Romney, Keith Bradford	Utah
Rodgers, Joseph Charles	Va.	B.S. 1952, University of Utah	
A.B. 1948, University of Wisconsin	D.C.	Romney, Vernon Bradford	Va.
Rodgers, Margaret Virginia	Iowa	B.S. 1948, University of Utah	
Rodgers, Quinn Joseph	Fla.	Ronimus, Arthur Dyer	D.C.
Rodman, Robert Eugene	D.C.	Rood, Michael Kitching	Md.
Rodman, Norman David	Va.	Rosen, John Joseph	D.C.
Rodriguez, Asa	D.C.	Rosen, William Albert	Wash.
Rodriguez, Peter Alfonso	D.C.	Rost, John Frank	Va.
Rodriguez, Santiago	Md.	A.B. 1946, Princeton University	
B.S. 1952, North Dakota State College		A.M. 1947, Fletcher School of Law and Diplomacy	
Roe, Martha Gillespie		Roper, George, Jr.	Texas
Rodwick, Charles Barnett	Md.	Rork, John Behl	Colo.
Roland, Lavinia Herman	Pa.	B.S. 1942, University of Denver	
B.S. 1950, University of Wisconsin	D.C.	Rouse, Mary Frances	Va.
Romisch, Davis Harrison	D.C.	B.S. in Ed. 1949, Longwood College	
B.S. 1949, Yale University		Rose, Elaine Tenny	Md.
Ronzel, Martha Helen	Ind.	A.B. 1948, American University	
Rosera, Adeline Townsend	S.C.	Rose, Esme Westland	Md.
A.B. 1948, University of North Carolina		B.S. 1948, University of London	
Rosert, Dora Ella	Miss.	Rose, Kenneth Jeter	Va.
Rogers, Dorothy Schamba	Md.	Rose, Neil Messen	N.J.
Rogers, George Johnston	Va.	B.M.E. 1949, Northwestern University	
Rogers, John C.	D.C.	Rose, Ralph A.	D.C.
		Rosell, John Lawrence	N.J.
		A.B. 1951, Johns Hopkins University	
		Roseman, Johnnie Humphreys	Va.
		Rosen, Alvin	D.C.
		Rosen, Herbert Harry	D.C.

Rosen, Marvin Herah B.S. 1951, Pennsylvania State Teachers College, Kutztown	D.C.	Ross, Lloyd Edward, Jr. Ross, Marvin Stanley Ross, Mary Romans	D.C. D.C. Mass.
Rosen, Norma Rosalyn B.S. 1944, Wayne University	Md.	A.B. 1940, Grinnell College	Va.
Rosen, Richard James	N.Y.	Ross, Raymond Curtis	Tenn.
Rosen, Robert Martin B.S. 1950, New York University	N.Y.	Rossett, Dorothy Ann	N.Y.
Rosenbaum, Marcus Anthony	D.C.	Rossi, Alfred George	D.C.
Rosenberg, Florence A.B. 1952, Brooklyn College	D.C.	Rost, John Paul	W.Va.
Rosenberg, Harvey A.B. 1947, LL.B. 1950, University of Texas	Texas	A.B. 1952, University of Pittsburgh	Calif.
Rosenberg, Jules	D.C.	Roten, John Wesley	Va.
Rosenberg, Nelson C. A.B. 1929, Duke University	D.C.	Rotermund, Maynard Burr	D.C.
Rosenberg, Thomas	D.C.	A.B. 1946, University of California	D.C.
Rosenblatt, Harry Myer B.S. 1948, The George Washington University	N.Y.	Roth, Lewis F. B.C.E. 1948, Cornell University	N.Y.
Rosenblatt, Marvin Bruce	D.C.	Roth, Maxine	Ind.
Rosenbloom, Joseph	D.C.	Rothberg, Samuel Bernard B.S. in Eng. 1951, The George Washington University	Va.
Rosenbloom, Joshua H. B.S. 1944, Brooklyn College	Md.	Rothfeld, Aron Isser	Va.
Rosenbloom, Melvin Louis	Ill.	Rothgeb, Roy Martin	Va.
Rosenblum, Bertram L.	N.Y.	Rothrock, John Allen, Jr. B.S. 1945 Northwestern University	Ind.
Rosenblum, David Joseph B.S. 1949, The George Washington University	N.Y.	Rothrock, Richard Cleves	D.C.
Rosendorf, Harvey B.S. 1951, University of Maryland	D.C.	Rothrock, Roger Lee	Md.
Rosendorf, Stanley Bernard B.S. 1948, University of Maryland	Md.	A.B. 1949, Indiana University	D.C.
M.S. 1952, The George Washington University		Rothstein, Lorain Ruth	Md.
Rosenfeld, Edward Morris B. Arch. 1928, University of Pennsylvania	N.J.	Rothstein, Nathaniel B.S. 1950, The George Washington University	Ohio
Rosenfeld, Lola	D.C.	Rothstein, Seymour B.S. 1952, Case Institute of Technology	Mo.
Rosenfeld, Sidney Nathan B.S. 1951, University of Maryland	Va.	Rothwell, Gideon Franklin B.S. in M.E. 1949, University of Missouri	Md.
Rosenman, Louis A.B. 1948, Brooklyn College	N.Y.	Rotkin, Irving Jacob B.S. in M.E. 1946, Virginia Polytechnic Institute	Va.
Rosenon, Vivian Carmel A.M. 1949, New York University	D.C.	Roudabush, Bettie M.lett	Va.
A.B. 1952, The George Washington University		Roudabush, Martin Moore	D.C.
Rosenweig, Denise Schwartz	N.Y.	Roudabush, Robert Mackey B.S. 1949, University of Maryland	Ohio
Rosenthal, Helen Miller A.B. 1950, Wellesley College	D.C.	Rouse, Jules Maynard A.B. 1940, University of California at Los Angeles	D.C.
Rosenwasser, Hyman A.B. 1946, Brooklyn College	N.Y.	Roushdy, Mohamed Abdel Moneim B. Com. 1947, Fouad I University, Egypt	D.C.
Roski, Clem Joseph B.S. 1940, Pennsylvania State Teachers College, East Stroudsburg	D.C.	Rousseau, Helen Boardman	Mass.
Roslyn, Albert Steven	D.C.	Routier, Edith Mary A.B. 1949, Bates College	France
Ross, Audrey Beulah	D.C.	Roux, Marie Jeannine	D.C.
Ross, Bob	Va.	Roux, Ronaldo John A.B. 1949, University of Florida	Fla.
Ross, Carl Richard	D.C.	Rovner, Sara	Va.
Ross, Clifford Elwyn	Pa.	Rowan, Michael Beatty A.B. 1952, The George Washington University	Conn.
Ross, Daniel Michael A.B. 1946, A.M. in Govt. 1948, The George Washington University		Rowand, Roger Benjamin	Va.
Ross, Dorothy Estelle	D.C.	Rowe, Allen Stanley	D.C.
Ross, Guy Elliot	Ohio	Rowe, Gail B.S. 1950, American University	Md.
Ross, Ian Kenneth B.S. 1952, The George Washington University	D.C.	Rowe, George Frederick	Va.
Ross, Jane Cupples	D.C.	Rowe, William Dennison, Jr. A.B. 1952, The George Washington University	D.C.
Ross, John Bernard	D.C.	Rowe, Willis Case A.B. 1948, LL.B. 1950, LL.M. 1952, The George Washington University	Va.
Ross, Leah Edith	Mass.	Rowell, Thomas Wesley	D.C.
		Rowland, Melvin Lunsford LL.B. 1951, University of Mississippi	Pa.
		Rowles, Marvin Lee	

Romse, Laura Carter	D.C.	Runkle, John Curtin	Del.
Roxon, Daniel	Md.	B.S. 1952, University of Delaware	
A.B. 1940, Brooklyn College		Ruppert, Thomas Otto, Jr.	Va.
Roy, Huguette Adrienne	N.H.	Rus, Patricia Gordon	D.C.
Roy, Ruth R.	Calif.	A.B. 1952, University of California	
A.B. 1940, University of California		Rush, Charles Findley, Jr.	Va.
Royle, Robert Clinton	Md.	Russ, Robert Heinrich	D.C.
Ryan, Clinton Wilson, Jr.	Calif.	Russell, Anne Carter	Va.
Rzansky, Gerald Ivan	D.C.	Russell, Conrad Laird	Texas
Rummen, Robert Sanford	D.C.	Russell, Conrad Norman	Md.
Rubio, Louis Leonard	D.C.	Russell, Howard Harding, Jr.	N.D.
A.B. 1951, The George Washington University		A.B. 1951, University of North Dakota	
Rubin, Louis	D.C.	Russell, James Miller	D.C.
B.S. 1950, Wilson Teachers College		Russell, Margaret Ruth	Md.
Rubin, Louise	D.C.	Russell, Myrtle Ellen	N.D.
Rubinstein, Bertha Wexler	D.C.	A.B. 1944, The George Washington University	
A.B. 1949, Bryn Mawr College		A.M. 1952, Georgetown University	
Rubinstein, Julius Louis	Ill.	Russell, Olivia	D.C.
B.S. 1944, University of Illinois		A.B. 1920, A.M. 1925, Barnard College	
Rubinstein, Sam	Va.	Russell, Patricia Gertrude	D.C.
Rubice, George H.	Pa.	Russell, Paul George	Ohio
A.B. 1948, Harvard University		A.B. 1950, Kenyon College	
Rubman, Herbert	Md.	Russell, Richard Angus Kenneth	N.Y.
A.B. 1949, Brooklyn College		Russell, Ronald Lee	Va.
Ruch, Paul Lewis	D.C.	Russell, Stanton Best	D.C.
Ruckart, Robert Thorne	Va.	B.M.E. 1949, The George Washington University	
Ruckel, Neil	W.Va.	Russell, Thomas Hale	Va.
Rucker, Glenna Jo	Ind.	A.B. 1949, Harvard University	
Rucker, Marjorie Ann	D.C.	Russell, Warren Allan	D.C.
Russell, LeRoy Unsworth	D.C.	Russell, William Augustine, Jr.	Va.
Ruel, Velva Elaine	D.C.	Russell, William Manning	D.C.
B.S. 1941, M.S. 1952, North Dakota Agricultural College		Russell, Willie Hayden	D.C.
Rudewick, William Kenneth	D.C.	A.B. 1944, Ed.M. 1948, Oklahoma City University	
B.S. 1948, Pennsylvania State Teachers College, Millersville		Rudolf, Joseph Edward	Pa.
A.M. in Ed. 1951, The George Washington University		B.S. in E.E. 1948, University of Pittsburgh	
Rudin, Arnold James	Va.	Rutherford, Marsha Stillman	Pa.
Rudin, Sheldon Hugh	N.Y.	A.B. 1948, Wellesley College	
Rudolph, David	Md.	Rutland, Carey Tate	Ga.
A.B. 1949, The George Washington University		B.S. 1952, University of Georgia	Texas
Rudolph, Flora Lee	Ky.	Rutland, James William	D.C.
Rudolph, Samuel	D.C.	Rutland, Joan Margaret	Md.
Rudy, Lester Eugene	Md.	Rutledge, Harry S.	Pa.
A.B. 1950, The George Washington University		Ryan, Charles Patrick	Va.
Rudolph, Richard	N.I.	Ryan, Dorothy Eloise	
Ruehl, Robert Frank	Md.	A.B. 1951, American University	
B.S. in M.E. 1943, Washington University		Ryan, Edward Francis	Va.
Ruffin, Milvka	France	Ryan, James Mark	Pa.
Ruffin, Anthony Joseph	D.C.	Ryan, John Michael	
B.M.E. 1951, Catholic University of America		B.S. 1950, LaSalle College	
Rubin, Barbara Dorosh	Va.	Ryan, John Powell	Md.
A.B. 1952, College of Wooster		Ryan, Martin James	Md.
Rugilecki, Dorothy Frances	Mass.	B.F.E. 1950, Manhattan College	
Rufin, Terrell Louis	Va.	Ryan, Philip Michael, Jr.	Pa.
B.S. in Chem. Eng. 1949, Pennsylvania State College		Ryan, Rita Marie	N.Y.
Ruhn, Howard Bernard		Ryan, William Edward	Md.
Ruhn, Norma Wolfe	D.C.	B.S. in E.E. 1941, University of Michigan	
Ruhr, Elizabeth	D.C.	Ryan, William James	
Rulman, Anne Harris	Md.	A.B. 1947, A.M. 1949, Catholic University of America	
Rumbarsh, Jeffrey Hamilton	Va.	Ryder, Elizabeth Margery	D.C.
Rumble, Richard Lawrence	D.C.	Ryder, Robert Boston	Conn.
Rumford, Donald Chester	Va.	Ryburn, William Norman	Mass.
Rumke, Richard William	Va.	A.B. in Govt. 1951, The George Washington University	
Runge, Deane	D.C.	Rydyk, Karin Maria Elizabeth	D.C.
	N.Y.		

Ryman, Kermit Warren	Pa.	Se. Arnold, Genevieve Gladys	D.C.
Rymer, Thomas Arrington	Md.	St. Clair, Betty Jane	Va.
B.C.E. 1948, Cornell University		St. Clair, Robert Gordon	N.C.
Rynerson, Wendell Price	Ind.	St. George, William Ross	D.C.
A.B. 1926, DePaul University		B.S. 1946, U.S. Naval Academy	
LL.B. 1929, Indiana University		St. John, Richard	Md.
LL.M. 1947, The George Washington University		A.B. 1950, Catholic University of America	
Ryno, Brooks	D.C.	St. Johns, Ernest Keyes	
B.S. 1948, Hofstra College	D.C.	St. Ledger, James Joseph	
Ryon, Joseph William		B.S. 1950, Pennsylvania State Teachers College, East Stroudsburg	La.
S		St. Paul, Nadia de la Houssaye	Va.
Saah, Issa Mousa	D.C.	St. Peter, Joseph W. M.	D.C.
Saathoff, Robert Lee	Mich.	St. Thomas, Dorothy Laird	D.C.
Sabados, Peter John	N.J.	Sakiotis, Catherine Ermidis	D.C.
Sabatini, Edmund John	N.Y.	Salata, Helen Elizabeth	D.C.
Sabella, Richard, Jr.	D.C.	Salem, Diane Nadia	D.C.
Sabghir, Aaron Seymour	N.Y.	Salem, Hassan Aly Hassan	Secido N.Y.
B.S.S. 1941, College of the City of New York		A.B. 1945, Fouad I University, Egypt	
Sabghir, Freddie Orleans	N.Y.	Salen, Ingrid Kristina	
B.S. 1944, Cornell University		Sales, Pierre Lucien	D.C.
A.M. 1947, Columbia University		A.B. 1947, Columbia University	D.C.
Sabine, Edward Bliss	D.C.	Salina, Ephraim Gilbert	
Sabol, Eugene	N.Y.	Salkovitz, Sue Feld	D.C.
B.Ch.E. 1950, Rensselaer Polytechnic Institute		A.B. 1945, University of North Carolina	D.C.
Sabol, Stephen Vincent	Ohio	Sallas, Gustav Adolph	
B.S. in Ed. 1936, North Carolina State College		A.B. 1950, A.M. 1951, The George Washington University	Pa.
Sachnoff, Elaine A.	Va.	Salmon, Ralph Franklin	Md.
Sachs, Barbara Faith	D.C.	Salomon, William E.	D.C.
Sachs, Robert Neal	Mo.	Salto, Paulette Marie	D.C.
Sachs, Theodore	Va.	Salvatori, Bernardo Enzo	Ky.
A.B. 1914, Brooklyn College		Salvers, Edwin Giltner	
A.M. 1930, Columbia University		B.S. 1941, Lincoln Memorial University	Va.
Sack, Paul Matthew	Mass.	Salzberg, Calvin D.	
A.B. 1952, Tufts College		B.S. in E.E. 1940, The George Washington University	Va.
Sackett, Marian Louise	Conn.	Salzberg, Leon Irving	Md.
B.S. 1951, St. Joseph College		Salzer, Joseph	Mo.
Sackman, Robert	D.C.	Sames, Mary Ann	Va.
Sacks, Alvin Miles	Iowa	A.B. 1947, University of Missouri	S.C.
A.B. 1949, University of Minnesota		Samples, Ramona	
Sacks, Jacob Milton	D.C.	Sampson, Archibald Johnson	
Sadek, Amina	D.C.	A.B. 1935, Stanford University	D.C.
Sadik, Mahmoud Mohamed	D.C.	A.M. 1946, University of California at Los Angeles	Tenn.
Sadler, Lloyd Elwyn	Mich.	Sampson, Patricia Edine	
Sadote, Joseph Anthony	D.C.	Sams, William Ralph	Va.
Sadowski, Eugen	D.C.	A.B. 1948, Lockham College	Md.
Sadusky, Alfred A.	Va.	Samson, Chester Page	Va.
A.B. 1914, Western Maryland College		Samuel, Dorothy M.	D.C.
A.M. 1940, Columbia University		Samuelson, Frederick Clarence	Ill.
Sefer, Susan Arvay	D.C.	Samuelson, Glendene Marie	Guam
A.B. 1950, Western Reserve University		Samuelson, Kenneth Robert	N.M.
Saffer, John Franklin	Va.	San Agustin, Joe Taitano	Pa.
Sager, Gene Gustav	Va.	Sanchez, Ben Pete	Va.
Sager, Oscar Simon	Conn.	Sanchez, Burdette Boardman	D.C.
A.B. 1940, New York University		Sanchez, Louis John	D.C.
Sager, Ralph Franklin	D.C.	Sanchez, Luis Rafael	Puerto Rico
Sager, Stanley Melvin	Va.	Sanchez, Margaret May	
A.B. 1949, Duke University		Sanchez, Zulma Maria	
Saggese, Arnold	Va.	B.S. 1952, The George Washington University	Va.
B.S. 1951, Georgetown University		Sandeen, Charles Edward	D.C.
Saginer, Martin Abe	D.C.	Sanderlin, Sue Frances	Ind.
Sagle, Robert Franklin	Md.	Sanders, Bertram Webb	N.C.
A.B. 1941, The George Washington University		A.B. 1940, Earlham College	Min.
St. Amand, Joseph Maxim, Jr.	Ind.	Sanders, Frank Powell	Va.
B.S. in E.E. 1949, Purdue University		Sanders, James Leon	
		Sanders, Jean Lewis	

Students Registered

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Sanders, Leslie Elwood A.B. 1949, Franklin College of Indiana	D.C.	Saville, John William A.B. 1950, The George Washington University	Md.
Sanders, Mack	D.C.	Saville, Richard Charles	Md.
Sanders, Martha Carlton A.B. 1951, West Virginia University	W.Va.	Sawka, Samuel A.B. 1950, Wilkes College	D.C.
Sanders, Wharton Seymour, Jr.	Md.	Sawyer, Francis David	N.C.
Sanderson, Agnes Isabel	D.C.	Sawyer, George Edward	Md.
Sanderson, John Melville, Jr.	Va.	Sawyer, Grace Henrietta	N.C.
Sanderson, Ruth Irene	N.J.	Sawyer, Joan Elinor B.S. 1949, Washington College	D.C.
Sandin, Bruce Martin	Va.	Sawyer, Lola Gray	N.C.
Sandler, Jerome Lewis	D.C.	Saxe, Lillian Mitchell	Va.
Sandmeyer, Melvin Wesley, Jr. A.B. 1950, The George Washington University	D.C.	Saxon, George Edward	D.C.
Sanford, Allen McCanne B.S. in E.E. 1948, University of Illinois	Ohio	Saylor, Mary Louise B.S. 1946, University of Illinois	Ill.
Sanford, Theodore Hamlin A.B. 1952, Bowdoin College	Del.	Sayre, A. Gail	D.C.
Sanger, Marshall B.S. 1946, U.S. Military Academy	N.Y.	Sayre, Jean Skinner A.B. 1948, John B. Stetson University	Fla.
Sannel, Howard	Minn.	Sayre, Robert Marion A.B. 1949, Willamette University	Oreg.
Sanphy, Elizabeth Florence	Maine	Scafield, Alfred	Va.
Sancon, Carlos Edgar	D.C.	Scanlan, Sidney Joseph	La.
Sant'Anna, Firmiana	Brazil	Scanlon, Bertha Teresa	D.C.
Santer, Melvin B.S. 1949, St. John's University M.S. 1951, University of Massachusetts	N.Y.	Scanlon, Dolores Ann	D.C.
Santos, Charles Socrates	D.C.	Scanlon, Maureen Fairclough	D.C.
Sapp, Evelyn Virginia	D.C.	Scappaticci, Mary B. Scarborough, James K. A.B. 1949, LL.B. 1951, The George Washington University	Conn. Miss.
Sarshan, Bernard Leonard B.S. 1942, Loyola University M.S. 1948, Harvard University	Md.	Scarborough, Maxine A.B. 1937, University of South Carolina A.M. 1947, Columbia University	S.C.
Sarasin, Lewis B.S. 1949, University of Utah	D.C.	Scarrow, William Arthur	Va.
Sarris, Michael	D.C.	Scavullo, Joseph James M.E. 1941, Stevens Institute of Technology	Md.
Sartor, Louis Jean	W.Va.	Schade, Edward Charles	Va.
Saulow, Leonard David B.S. 1949, College of the City of New York	Fla.	Schaefer, Dora Blanche	D.C.
Sav, Joan Helen	D.C.	Schaeffer, Eliza Ann A.B. 1951, University of Maryland	Md.
Savrosamidjoio, Savitri Pradjawati	Indonesia	Schaefer, Robert David	Va.
Sattler, Leonard Seymour B.S. 1949, Seton Hall University LL.B. 1951, Georgetown University	D.C.	Schaffner, Harry Joseph	D.C.
Sauer, Herbert Irvin A.B. 1952, Ohio State University	Md.	Scharf, Elisabeth	D.C.
Sauer, Karl F.	Ark.	Schattner, Theodore Jacob B.B.A. 1941, College of the City of New York	N.Y.
Saul, Norma Helen	N.Y.	Schatz, Bernard	N.Y.
Sauls, John Clinton	D.C.	Schatz, Louis A.B. 1950, A.M. 1951, The George Washington University	Va.
Saunders, Glenn William, Jr. B.S. 1948, Virginia Polytechnic Institute	Ga. Va.	Schatzman, Joan Harolyn	D.C.
Saunders, James Franklin, Jr.	Va.	Schaum, Amy Helene	Md.
Saunders, Kenneth Miller A.B. 1953, West Virginia University	Del.	Schechter, Israel	D.C.
Saunders, Marshall B., Jr. A.B. 1951, University of South Carolina	S.C.	Scheel, Nicholas Tyler	D.C.
Saunders, Mildred Lee	Va.	Scheiman, Philip Henry	D.C.
Saunders, Sidney	Va.	Scheltin, Eric Paul A.B. 1948, Columbia University	N.Y.
Saurel, Susan Mary	D.C.	Scheltens, Johannes Lorenzo	Ill.
Savage, Maxine Joan	Va.	Scheltens, Walter Roland	Md.
Savage, Arthur Paul A.B. 1948, Vanderbilt University	D.C.	Scheps, Bernard Beryl	Va.
Savage, John William	Va.	Scherback, William John B.S. in E.E. 1946, University of Wisconsin	Va.
Savage, Noel Hinchman A.B. 1944, University of Richmond	D.C.	Scheurich, Paul Raymond	Va.
	Va.	Schick, Irvin Henry	Pa.
		Schick, Patricia Louise	D.C.
		Schiff, Geraldine Rita	N.J.
		Schiff, Jeanne Ruth	Md.
		Schiff, Morton Nathan	D.C.

Schiffman, Gilbert Bernard	Ed.	Schneider, Allan Melvin
A.B. 1954, The George Washington University		Schneider, Marvin
Schiffman, Harold	Maen.	Schoch, Robert Hamilton
B.S. 1951, The George Washington University		Schock, Carlyle William
Schiffman, Irving Israel	N.Y.	Schocken, Victor
B.S., A.M. 1950, Columbia University		A.B. 1942, New York University
Schiller, Alvin	Va.	M.S. 1943, Oregon State College
Schilling, Robert George	Ind.	Ph.D. 1947, California Institute of Technology
B.S. 1952, Purdue University		Schoen, Richard Davis
Schilt, Glenda Barbara	Md.	A.B. 1949, The George Washington University
Schmelpling, Clarence William	Texas	Schoenfelder, Richard Irving
Schotmel, Fern	D.C.	Schofer, Joseph Louis
Schneider, Oscar Henry	N.J.	B.S. 1950, Wilson Teachers College
B.S. 1952, Montana State College		Schofield, Donald James
Schneider, Robert Louis	Va.	B.S. 1948, Montana State University
Schnie, Douglas George	D.C.	Schofield, Herbert Mellor
B.S. in E.E. 1950, University of Wisconsin		Schofield, James Hamlin, Jr.
Schning, Clifford	Mo.	B.S. 1943, U. S. Military Academy
Schodnick, Leon Joseph	D.C.	Scholz, Otto Frederick, Jr.
Schoepfer, Gerard George	Ill.	Schommer, Theodore Bernard
Schlemmer, Roy Ramon, Jr.	D.C.	Schonberger, Claude Marvin
B.E.E. 1952, The George Washington University		Schooley, Mary Elizabeth
Schlesinger, Daniel	N.Y.	Schork, Paul Klayton
Schlesinger, Lawrence Erwin	Va.	Schorr, Deena Ruth
B.S. 1944, A.M. 1948, Boston University		Schoudt, Paul Bernard
Schlie, Roland Wendel	Md.	Schreiber, Carol Hermine
B.S. in E.E. 1949, Duke University		Schreiber, Hilda
Schlusel, Charles Sidney	N.Y.	A.B. 1944, The George Washington University
Schlusberg, Richard Turner	Va.	Schreiber, Mary Ruth
B.S. 1948, Bowdoin College		Schreiber, Mary T.
Schlosser, Evelyn Regina	N.D.	Schreiber, Samuel Michael
Schlosser, Stanley David	D.C.	B.S. 1950, M.S. 1961, The George Washington University
Schlosser, Susan	Md.	Schremp, Margaret Corbett
Schottorbeck, Walter B.	Va.	Schrenk, Lorenz Philip
B.S. 1948, U. S. Military Academy		Schmer, C. Esther
Schmalstieg, William Riegel	N.H.	Schneider, Mary Ellen
A.M. 1951, University of Pennsylvania		Schneider, William Thomas
Schmeltzer, David Phillip	N.Y.	A.B. 1948, Marquette University
Schmeitzer, Edward	D.C.	A.M. 1950, Harvard University
A.B. 1950, Hunter College		Schneider, Mary Eleanor
A.M. 1951, Columbia University		Schneider, William Edward
Schmeltzer, Jeanne Marie	D.C.	Schubert, Coralie Williams
Schmidt, Paul Emil, Jr.	Md.	A.B. 1916, Baker University
Schmidt, Sylvia Maria	Md.	A.M. in Ed., 1946, The George Washington University
Schmidt, Arthur Walter	Va.	Schubert, Ethel Josephine
B.S. 1948, Webb Institute of Naval Architecture		A.B. 1926, Beloit College
Schmidt, Catherine Marie	N.Y.	Schuber, Robert K.
Schmidt, Charles Gordon	Md.	Schuler, James Lee
A.B. 1951, University of Maryland		B.S. 1917, Webb Institute of Naval Architecture
Schmidt, Christ an Joseph	Va.	Schuller, Gisela
B.S. 1947, Rutgers University		Schuler, Fred Walker
Schmidt, Dorothy Augusta	Md.	Schulte, Roger Reid
Schmidt, John A.	Ill.	Schulteis, Charles William
Schmidt, Joseph George	Pa.	A.B. 1950, University of North Carolina
Schmidt, Virginia Rose	Ill.	Schultz, William Harrison
Schmitt, Frances Marx	Pa.	Schultz, Ernie Louis
Schmitt, Richard Frederick	D.C.	Schultz, William Charles
B.S. 1950, Seton Hall University		B.S. 1948, University of Wisconsin
Schmittson, Mary Jane	Ill.	Schultz, Richard P. I.
Schnitzer, Michael	D.C.	Schumacher, Donald E.
Schmookler, William	D.C.	B.S. 1951, Minnesota State Teachers College, Mankato
Schmutz, Charles Andrew	Utah	Schumann, Walter Arthur
B.S. 1951, University of Utah		Schupp, Kenneth Earl
Schnack, Elizabeth Mary	Va.	Schuster, John Thomas
A.B. 1952, Ohio State University		
Schnack, George Albert	Va.	
Schnacke, Donald Powell	Va.	
B.S. in M.E. 1951, Oklahoma Agricultural and Mechanical College		

Students Registered

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Schutz, Jack Jacob A.B. in Govt. 1948, The George Washington University	D.C.	Scribner, Albert Willis B.S. 1949, Northeastern University	Md.
Schutz, Julian Adolph A.B. 1949, Stanford University	D.C.	MS. 1950, University of New Hampshire	Va.
Schwab, Gerald A.B. 1949, University of Chicago	Md.	Scrivener, James Milton	D.C.
Schwab, Walter Snowden A.B. 1951, Stanford University	Md.	Scrobe, Eleanor Jarl	Mo.
Schwartz, Frank Charles B.S. 1949, Ohio State University	Md.	Scruggs, Margaret E. A.B. 1952, Washington University	Mo.
Schwartz, Gilbert A.B. 1948, L.I. B. 1952, The George Washington University	N.Y.	Seabaugh, Paul William A.B., B.S., 1942, Southeast Missouri State College	Va.
Schwartz, Helen Janet B.S. 1948, College of the City of New York	D.C.	Seabring, Joan Sandra	Ga.
Schwartz, Milton Allan B.S. 1948, College of the City of New York	N.Y.	Seabrooke, Harry Raymond	D.C.
Schwartz, Norman B.C.E. 1948, College of the City of New York	D.C.	Sealock, Robert Winfield	Md.
Schwartz, Sol A.B. 1948, College of the City of New York	N.J.	Seaman, Gleason Orville	D.C.
Schwartz, Tamara	Va.	Sear, Edith	Pa.
Schwartz, Harry Emmanuel	Md.	Seash, Harry Edwin	N.J.
Schweiger, Irving A.B. 1939, College of the City of New York	Va.	Sears, Arthur Leslie	Va.
Schweitzer, Edwin Paul	D.C.	Sears, Robert Elsworth A.B. 1950, University of Cincinnati	Md.
Schweitzer, Glorine Green	N.Y.	Sebold, Charles Joseph	Va.
Schweitzer, H. George A.B. 1949, Tufts College	D.C.	Sebra, Charles Dentley A.B. 1951, Lynchburg College	D.C.
Schweitzer, Phyllis Ann	D.C.	Sebra, Robert Paul	D.C.
Schweitzer, Ann	Pa.	Seckinger, Daniel Lamont A.B. 1951, The George Washington University	Va.
Schwerdtfeger, Lee Houser	Md.	Secor, John Maurice A.B. 1951, San Diego State College	Va.
Schwieger, Alfred Joseph	D.C.	Secrist, Naomi Bales	N.Y.
Schwieger, Alan Edward	D.C.	Seebach, Harry Paul B.S. 1951, Georgetown University	D.C.
Schwis, Richard Salvatore B.S. in E.E. 1949, Lafayette College	Pa.	Seebold, Robert Elvin	Va.
Schwarz, Anthony Harry Ross	D.C.	Seeger, Edward Gustave Ph.B. 1942, University of Wisconsin	Va.
Schwarz, Ruth McKelway	Pa.	Seegrist, Donald Wayne	Ill.
Schwarz, Richard Womack	Va.	Seehausen, Robert Howard B.S. 1951, Northwestern University	N.Y.
Schwarz, Ellen Cooney	D.C.	Seeley, Eugene Francis	Md.
Schwarz, Charles Robert A.B. 1948, University of Maryland	Tenn.	Segal, Bernard Rubin B.S. 1949, The George Washington University	D.C.
Schwarz, Kenneth Martz A.B. 1949, The George Washington University	N.C.	Segal, Bruce Zolfin	D.C.
Schwarz, John Anthony A.B. 1952, University of Maryland	Md.	Segal, Joseph	D.C.
Schultz, Donald	D.C.	Segal, Neil	D.C.
Schultz, Charles Earl	Conn.	Segal, Nina	Mass.
Schultz, Dana Lee A.B. 1949, Yale University	Pa.	Segar, Joseph Clark A.B. 1951, University of Virginia	D.C.
Schultz, Fred Lewis B.S. 1949, Pennsylvania State Teachers College, West Chester	D.C.	Seiden, Herbert Roser	D.C.
Schultz, Harold Everett	Va.	Seiden, Lillian Ruth	D.C.
Schultz, Jack Richard	D.C.	Seidman, Shyrle Gloria A.B. 1946, Brooklyn College	D.C.
Schultz, Jean Magnolia	Md.	Seim, Lowell Edgar	N.Y.
Schultz, Joseph Lee	D.C.	Seiman, Jerome Jacob	D.C.
Schultz, Laurence Taylor B.S. 1950, Niagara University	Wash.	Sein, Maung Nyun	D.C.
Schultz, Madge Jeannette	D.C.	Sekhri, Man Hohan	D.C.
Schultz, Martha Jane	D.C.	Selbin, Joel	D.C.
Schultz, Owen Woody	Va.	Seldin, Ira L. B.S. 1951, College of the City of New York	Conn.
Schultz, Robert Mitchell B.S. in E.E. 1949, Polytechnic Institute of Brooklyn	Md.	Seley, Florence Leiken	Va.
Schultz, Ruth	Va.	Selfridge, Eileen Hites Ed B. 1926, Western Illinois State College	W.Va.
Schultz, Sarah Lou	D.C.	A.M. 1952, Columbia University	Ohio
Schultz, Sue Ann	D.C.	Seligman, Ethel Ruth A.B. 1943, West Virginia University	Va.
Schultz, Walter Conrad	Va.	A.M. 1944, University of Michigan	D.C.
Schultz, Wilbur Newton	D.C.	Sells, Harry George A.B. 1940, University of Pittsburgh	
A.B. 1942, West Liberty State College	D.C.	Seltmann, Elaine Carol	
		Selzer, Orie A.B. in Govt. 1951, The George Washington University	

Semington, Helen Shirley	Wis.	Shah, Ahmed Magbul	D.C.
Semikew, George Edward	Pa.	Shaheen, Robert Andrew	D.C.
Semmanian, Edward, Jr.	Va.	Sham, Harold	Conn.
Semons, Joan Frances	D.C.	B.S. 1949, University of Connecticut	Conn.
Sensker, Ralph Morton	D.C.	Shakespeare, Joseph Daniel, Jr.	D.C.
Sencenbaugh, Donald Wayne	Md.	A.B. 1950, Wesleyan University	
B.S. 1942, U. S. Naval Academy		Shalowitz, Ernest Maurice	D.C.
M.S. 1948, Massachusetts Institute of Technology		A.B. 1951, The George Washington University	D.C.
Sencindiver, John Frederick	Va.	Shank, Leonora Tema	D.C.
A.B. 1948, Bridgewater College		Shanklin, Jay Edwin	
Sendejo, Serapio L.	Texas	A.B. 1952, Washburn Municipal University of Topeka	Iowa
Sentt, Otto Ernest	N.D.	Shanks, Betty Lou	Ohio
A.B. 1943, Wartburg College		Shanks, Beulah Parker	N.J.
B.D. 1946, Wartburg Theological Seminary		Shannon, Roger Hall	
Seng, Dolores Marie	Nebr.	A.B. 1951, Dartmouth College	S.C.
Sengstack, George Fleming	D.C.	Shanos, Allan Augustus	D.C.
Serabian, Georges Jack	Md.	Shao-yu, Tang	
A.B. 1941, New York University		A.B. 1945, Central Institute of Political Science, Nanking	D.C.
Serado, Mildred Carmela	D.C.	A.M. 1951, American University	D.C.
Serber, Michael	D.C.	Shapiro, Shirley Gertrude	D.C.
Serbin, Joseph Costas	Md.	Shapiro, Geraldwin	D.C.
Seremetis, Michael George	D.C.	Shapiro, Gustave	N.J.
Sergeant, Russell Lewis	D.C.	Shapiro, Leila Cohen	Va.
Serr, Beverly Jean	Va.	Shapiro, Leonard Jay	N.Y.
A.B. 1951, University of North Carolina		Shapiro, Lela Sarah	D.C.
Servais, Raymond Alvin	Wis.	Shapiro, Nathan Elazer	D.C.
A.B. 1950, The George Washington University		Shapiro, Sandra Ruth	R.I.
Servidio, Salvatore	Va.	Shapley, Charles Ieland	
Sessions, Donald Upson	Fla.	Sharkey, Walter Joseph	Pa.
Sessler, Albert Louis, Jr.	Va.	A.B. 1950, Providence College	Ind.
B.S. 1950, Iowa State College		Sharon, William Samuel	Md.
Sestak, Joseph Ambrose	Pa.	Sharp, Allen	
B.S. 1942, U. S. Naval Academy		Sharp, Samuel Leonard	
M.E. 1940, Massachusetts Institute of Technology		L.L.M. 1912, J.D. 1934, University of Warsaw	D.C.
Settlemyre, Robert Eugene	Ohio	Sharpe, Doris Rebecca	N.J.
Sever, Francis Neal	S.D.	Sharrott, Edward Elbert	Md.
A.B. 1941, University of South Dakota		B.S. 1952, Rensselaer University	
Severe, Doris Wilmar	Md.	Shaw, Darrel Winston	
Severe, Everette	Md.	B.S. 1911, Pennsylvania State Teachers College	D.C.
Sewatson, Doris Joy	Iowa	Ed.M. 1916, Duke University	Va.
Sevenson, Norma Jewel	Iowa	Shaw, Dolores	
Sewell, Toxey Hannon	Ala.	Shaw, Edmund Stillwell	D.C.
B.S. 1942, L.B. 1948, University of Alabama		A.B. 1942, Holstra College	Pa.
Sexton, Alice Porter	Va.	Shaw, Juanita Harriet	Va.
A.B. 1936, Florida State University		Shaw, Lewis Charles	
Sexton, Burton Hathaway	Va.	Shaw, William Frederick	D.C.
B.S. 1940, Purdue University		B.B.A. 1940, University of Miami	D.C.
Sexton, Mary Jean	Fla.	Shea, Charles Nelson	
Seymour, John Aloysius	Md.	Shea, Danny	Md.
Shachner, Arthur Arden	N.Y.	A.B. 1951, University of Tennessee	Va.
A.B. 1952, The George Washington University		Shea, John Timothy	D.C.
Shachnis, John Paul	D.C.	Shea, Robert Tracy	
Shad, Mildred Nadine	D.C.	Sheahan, Marguerite Plummer	D.C.
Shadler, William Newton	N.Y.	A.B. 1910, University of Maine	Calif.
Shade, Henry Casper	D.C.	Shear, Irving	W.Va.
Shade, James Russell, Jr.	Md.	Shearer, William Kennedy	Va.
B.S. 1940, Millerville State Teachers College		Shedan, Bernard George	D.C.
A.M. in Ed. 1950, The George Washington University		Sheehan, Eugene Edward	Md.
Shade, Ned Louis	Pa.	Sheehan, Howard Paul	D.C.
Shafer, Fred James	Md.	Sheehy, Leo Joseph, Jr.	
Shafer, Richard Luther	Texas	Sheelor, Kenneth Clifton	Pa.
Shafer, Robert Eugene	Wis.	A.B. 1942, Randolph-Macon College	
B.S. 1950, University of Wisconsin		Sheffer, Albert Lester II	Va.
Shaffer, John Scott	Ohio	B.S. 1952, Franklin and Marshall College	
		Sheffs, John Frank	
		B.S. 1950, University of Connecticut	Va.
		Sherda, Walter Waldo	

Sheffer, Madeline Louise A.B. 1945, San Francisco State College	D.C.	Sheva, Gertrude Marie B.S. 1938, College of Wooster	D.C.
Shedde, Walter Franklin A.B. 1948, Princeton University	Pa.	M.S. 1952, The George Washington University	
Sheldon, Robert Sedgwick Shelley, Margaret Ann A.B. 1952, College of Wooster	Md. D.C.	Shewmaker, Genevieve Julia Shewmaker, Seymour Weddington Shubley, Jean Phillips B.S. 1947, Pennsylvania State College	Kans. Va. D.C. Calif.
Shelley, Francis J. Shell, Diane Shell, Gwendolyn Lois Shelley, Francis Joseph Shelley, Maryann Brown B.M. 1930, Syracuse University	Pa. Ga. Tenn. Pa. N.Y.	Shields, June Harriett Shields, Loretta Gene Shifflett, Helen Moreland B.S. 1940, Iowa State College A.B. 1948, The George Washington University	Iowa
Shelly, Dorothy Estelle Shelly, George William A.B. 1951, The George Washington University	Md. N.J.	Shihda, William George Shifting, Charles Liley Shim, Alvin Tusk A.B. 1949, University of Hawaii	D.C. Va. Hawaii
Shelly, Ronald George Shelton, Catherine Mary B.L. 1941, American University	N.J. D.C.	Shimabokuro, Henry Shin, Byong Hwan Shinholser, Martha Adelaide Shipley, William Stanton Shipman, Harvey Andrew A.B. in Ed. 1951, The George Washington University	Hawaii D.C. D.C. D.C. D.C.
Shelton, Eugene Bogart Shelton, Thomas Edwin Shenker, Shirley Lebeson A.B. 1949, The George Washington University	Mo. D.C. D.C.	Shipman, Karl Waldo Shirk, Gilbert LaRue Shirley, Julia Anne Shirley, Reginald Douglas Shivers, Forrest A.B. 1939, Emory University	Va. Pa. D.C. D.C. D.C.
Shenlo, William Edward B.S. 1950, North Dakota Agricultural College	N.D.	Shizuoka, Tadashiro A.B. 1927, Pasadena College Th.M. 1934, University of Southern California	D.C.
Shepherd, Francis William B.M.E. 1949, College of the City of New York M.S. in M.E. 1950, University of Minnesota	Md.	Shoah, Nigbat A.B. 1952, Karachi University	D.C.
Shepley, Paul Peter Sheppard, Dorothy Short Sheppard, Peggy Jeanne Sherad, Virginia Mae A.B. 1950, A.M. in Govt. 1951, The George Washington University	Va. D.C. Va. Texas	Shoekley, Mary Louise Shoemaker, Charles Erwin Shoemaker, Robert Frank Shoemaker, Thomas A. Edison, Jr. Shumaker, Florence Irene A.B. 1924, University of Nebraska	Va. Pa. D.C. D.C. Nebr.
Sheretz, Paul Claiborne Sheridan, William Edward Sheridan, William Franklin A.B. 1952, The George Washington University	D.C. N.J. D.C.	Shores, David Matthews Short, Edwin Howard Short, Janice Norma Shostek, Robert A.B. 1937, The George Washington University	D.C. Md. Va. Md.
Shermer, Paul Doran Sherman, Charlotte Rosslyn Sherman, Robert Miller Sherman, Roger William Sherman, Stanley Morton Sherman, William Robert B.S. 1946, University of Wisconsin	Va. D.C. Texas N.Y. D.C. Va.	Shoup, Carolyn Elizabeth Showalter, Joanne Fay Showell, Anne Mary Shows, Annie Katherine Shreve, James Southern Shropshire, Walter Allen Shugart, Elizabeth Wise A.B. 1947, Ohio University	Va. Va. Md. Miss. Va. D.C. Va.
Sher, Harry B.A. 1939, College of the City of New York A.M. 1950, American University	N.Y.	Shull, Shirley Anne Shull, Stanley Arthur Shulman, Joel B.S. 1952, University of Maryland Shulman, James Morris B.S. 1941, Catholic University of America	D.C. N.Y. D.C. D.C.
Sher, Stanley Irwin Sherin, Sydney S. Sherin, William Winsor A.B. 1951, The George Washington University	D.C. Va. Va.	Shumaker, Ruth Chandler A.B. 1945, Wheaton College Shuman, Irwin Shuman, Nancy Shumway, Elizabeth Rita Shupe, Anthony Pierce Shuster, Jacob B.M.E. 1949, College of the City of New York	Mass. D.C. D.C. D.C. D.C. N.Y.
Shenwood, Helen Elizabeth A.M. 1951, Randolph-Macon Woman's College	D.C.		
Sherwood, James Steck A.B. in Govt. 1947, The George Washington University	Va.		
Sherwood, Joyce B.S. 1945, Central Michigan College of Education	Mich.		

Shuster, Ronald Lowell	Ohio	Simms, Howard Homer	W.Va.
A.B. 1951, Ohio State University		B.S. 1950, West Virginia Institute of Technology	
Sides, Roberta Kane	D.C.	Simon, Charles Francis	Md.
Sidorov, Tatyana I.	D.C.	B.S. 1942, LL.B. 1948, University of Wisconsin	D.C.
Siegel, Abraham	Calif.	Simon, Melvin	Cuba
B.S. 1941, College of the City of New York		Simon, Miriam	Mex.
J.D. 1950, The George Washington University		Simon, Myron	Va.
Siegel, Betty	D.C.	Simon, Raoul Louis	
Siegel, Harry M.	D.C.	A.B. 1931, University of Minnesota	D.C.
Siegel, Julian Lee	Md.	Simon, Rhoda	
Siekawicz, Peter	D.C.	A.B. 1945, The George Washington University	Ala.
Doctor of Law 1924, University of Lwow, Poland		Simons, Barbara Elizabeth	Ala.
Sielicki, Peter John	D.C.	Simons, David Malcolm	
Siems, Henry Gerard Frederick	Md.	B.S. 1945, Cornell University	D.C.
A.B. 1911, Johns Hopkins University		A.M. 1951, Princeton University	D.C.
Sierra, Arnaldo Carmelo	Va.	Simons, Gene Gale	D.C.
Sikler, James Robert	D.C.	Simonton, Lawrence Joseph	Va.
Siko, Arnold	Fa.	Simpkins, James William	N.C.
Sikorsky, Albert	D.C.	Simpson, Ann Brown	
Silbaugh, Richard Walter	Iowa	Simpson, Charles Fredrick	N.C.
Silberman, Tom Albert	D.C.	B.S. 1949, Wake Forest College	
Silk, Francis William	N.Y.	Simpson, Harold Edward	
B.S. 1948, U. S. Naval Academy		A.B. 1916, A.M. 1946, University of North Carolina	Va.
Silleris, Maiga	D.C.	Simpson, Jack Byron	
Silletto, Charles David	Iowa	A.B. 1949, Earlham College	
A.B. 1952, University of Iowa		A.M. 1950, The George Washington University	Ill.
Silsky, Howard Wiswell III	Va.		Calif.
Silver, Elizabeth Booth	Mont.	Simpson, Janet	
Silver, Jack Samuel	Va.	Simpson, Joseph	
A.B. 1940, The George Washington University		A.B. in Govt. 1950, The George Washington University	Va.
Silver, Larry Bernard	D.C.	Simpson, Margaret Caroline	Va.
Silver, Lester	N.Y.	Simpson, Nathaniel Edward	D.C.
Silver, Marlene	Wash.	Simpson, Richard Douglas	Md.
Silver, Richard Abraham	Mass.	B.B.A. 1948, Westminster College	N.C.
LL.B. 1943, Boston University		Simpson, Robert Ellsworth	
Silver, Robert Francis	Va.	Simpson, Rosie Collie	
Silverman, Douglas	D.C.	A.B. 1912, Meredith College	
Silverman, Ely	D.C.	A.M. 1950, The George Washington University	Va.
A.B. 1940, New York University		Simpson, Thompson James	
B.S. 1947, Columbia University		B.E. in E.E., 1948, Tulane University	Md.
Silverman, Larry	N.J.	Simpson, Yvette Lacaze	Va.
Silvernale, David Milner	D.C.	Sims, Edgar, Jr.	Md.
Silverstein, Abraham	D.C.	B.S. 1951, East Tennessee State College	
Silverstein, Bennett Lyons	N.Y.	Sinauer, Ernst Maxwell	D.C.
B.S. 1949, Webb Institute of Naval Architecture		A.B. 1919, Cornell University	Va.
M.S. 1951, Massachusetts Institute of Technology		Sinclair, Ann Elizabeth	D.C.
Silverstein, David	Mass.	Sinclair, Mary Fuller	Philippines
A.B. 1952, Boston University		Sinclair, Peggy Jean	
Silverstein, Leonard	N.Y.	Sinco, Pilar Asuncion	D.C.
A.B. 1950, Hunter College		A.B. 1951, University of the Philippines	D.C.
Silverstein, Mitzi Lee	D.C.	Sincoff, Ellen Barbara	Va.
Silverstein, Ruth Elizabeth	N.Y.	Sinoff, Richard Joseph	
B.B.A. 1947, College of the City of New York		Singel, Robert Duane	D.C.
Simak, Ernest James	Ohio	A.B. 1942, University of Wisconsin	
B.S. 1952, Western Reserve University		Singer, Allen Milton	D.C.
Simi, Lawrence John	D.C.	A.B. 1952, The George Washington University	
Simmons, Boyd K.	Idaho	Singer, Lawrence Robert	D.C.
A.B. 1950, Brigham Young University		B.S. 1950, The George Washington University	
Simmons, John Thomas, Jr.	Md.	Singer, Markus Morton	D.C.
Simmons, Mary Milton	W.Va.	B.C.S. 1919, New York University	
A.B. 1950, West Virginia University		Singer, Ralph	
Simmons, Mildred Cora	D.C.	B.S. 1948, College of the City of New York	
Simmons, Patricia Ann	D.C.	M.S. 1951, Columbia University	
Simms, Charles Lebeau	Mass.		
Simms, Charles William	Va.		

Students Registered

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Singer, Solomon B.S. 1917, University of Miami	Md.	Slack, Richard Lee B.S. 1917, West Virginia Wesleyan College	Va.
Singh, Hari Bhawan	India	Sladote, Mark, Jr.	D.C.
Singston, Carey Bryan, Jr. B.S. 1951, University of Maryland	Md.	Slama, Chester Charles	Va.
Singston, Roy Edmund		Slater, Sheldon Harris	Md.
Sipe, Harry Clyde, Jr. B.S. 1912, U.S. Naval Academy	Md.	Slattery, Huet Harold	Md.
M.S. 1917, Massachusetts Institute of Technology	Pa.	Slaughter, Jerry Lee	Ark.
Sipe, Sarah Milnea B.S. 1928, Madison College	Va.	Slaughter, John Lee	Md.
Sipkov, Ivan Dimitrov LL.B. 1949, University of Sofia, Bulgaria	D.C.	A.B. 1949, Baylor University	D.C.
J.D. 1947, University of Innsbruck, Austria		Slaughter, Joseph Eugene B.S. 1943, University of Maryland	Va.
Sippel, Kenneth Fred A.B. 1930, University of California	Nev.	Slawson, Joan Leal A.B. 1929, University of Wisconsin	Wyo.
Supera, Enrico LL.M. 1936, Brazil National School of Law	Brazil	Slaxton, Florene Margaret A.B. 1939, University of Oklahoma	Md.
Sirles, Marvin Philip	D.C.	Slaxton, William Taft	Va.
Sirota, Helene Carole	D.C.	Slenker, Norman Frederick A.B. 1931, Ohio Wesleyan University	N.Y.
Siskind, Eliot Irvin A.B. 1948, Johns Hopkins University	Md.	Slessor, Rita F. A.B. 1947, Syracuse University	Va.
Sisler, Clifford Edward A.B. 1951, Catholic University of America	D.C.	A.M. 1951, Columbia University	Md.
Sisti, Joseph Francis B.S. 1952, Illinois Institute of Technology	Ill.	Slivins, John V.	N.Y.
Sithens, Edward Samuel A.B. 1950, The George Washington University	Md.	Sliskard, William Troy	Md.
Sithens, Lucille Edwards		Sloan, Sheila Mary	Md.
Sitton, Charles Richard A.B. 1948, Emory University	Md.	Slonaker, A. Christopher	Va.
Sitton, Paul Leon A.M. 1950, University of Pennsylvania	Ga.	Slote, Mosley Lay	N.Y.
Sitz, Clifford Paul Sitz, Walter Hoersch B.S. 1946, U.S. Naval Academy	D.C.	Slotemaker de Brune, Maria Wilhelmina	South Africa
M.S. 1952, Massachusetts Institute of Technology	D.C.	Slower, John Henry	Md.
LL.B. 1952, The George Washington University		Slodkin, Helen Elizabeth	Wis.
Sivets, Mary Siverson, Virginia Acton	D.C.	A.B. 1948, Wisconsin State Teachers College, La Crosse	
Sizem, Joseph Mapes	Va.	A.M. 1952, The George Washington University	N.Y.
Skalek, Rose	M.I.	Slones, Stuart I.	Md.
Skelly, John Thomas B.S. 1950, Columbia University	N.Y.	Smale, Bernard Clair B.S. 1949, University of Pittsburgh	D.C.
Skellman, Douglas Benjamin B.S. 1942, Pennsylvania State College	Pa.	Smale, Gordon Russell	W.Va.
Skinner, John William A.B. 1945, Wesleyan University	Md.	Small, Howard Ashby	Md.
A.M. in Govt. 1947, The George Washington University		Small, Leonard A.B. 1940, The George Washington University	Md.
Skinner, Leonard Morris B.S. in Ed. 1946, Southeast Missouri State Teachers College	D.C.	Small, Paul	Md.
Skinner, Nancy A.	Pa.	Small, Sally Rubin A.B. 1951, The George Washington University	N.J.
Skoff, Delores, Alice		Smalley, Barbara Corine	S.C.
Skoff, Leon	Denmark	Smallwood, Viola	D.C.
Skoda, Charles Thomas A.B. 1951, University of Pennsylvania	Va.	Smart, Claudia Emma	D.C.
Skorpaard, Robert Ivar D.C.		Smart, James Alexander	D.C.
Slava, James Ralph B.S. 1950, U.S. Military Academy	D.C.	Smoot, Pea Jewell	Pa.
Slone, Elaine Marie B.S. 1945, University of Nebraska	Nebr.	Smoot, David A.B. 1946, University of California at Los Angeles	Va.
		Smollex, Nancy Ada	Pa.
		Smolensky, Stephen James	Pa.
		Smoraldi, Angelo John A.B. 1949, Indiana University	Conn.
		Smorawski, Dorothy Marcella	Pa.
		Smolin, Marie Margaret A.B. 1951, Mount Holyoke College	Mass.
		A.M. 1952, Cornell University	
		Smith, Adabelle	D.C.
		Smith, Alma Marie	Ill.
		Smith, Archie Lee	D.C.
		Smith, Arthur Newell A.B. 1952, West Virginia University	W.Va.
		Smith, Audrey Correlia	D.C.
		Smith, Barbara Irene	D.C.
		Smith, Betty Jane A.B. 1952, The George Washington University	D.C.

Smith, Casper Hayden	Okla.	Smith, James Enlo	S.D.
Smith, Cecile Frazier	Va.	B.S. 1952, South Dakota School of	
Smith, Charles Earl	Md.	Mines and Technology	Md.
Smith, Charles Nesbitt	D.C.	Smith, James Joseph	Md.
Smith, Charles William	Va.	B.S. 1950, Holstra College	
A.B. in Govt. 1951, The George		Smith, Jennings Talbot	
Washington University		A.B. in Govt. 1950, The George	
Smith, Chimera	D.C.	Washington University	
Smith, Clara Louise	Md.	Smith, Joan Marlowe	
Smith, Clarence Howard Erskine	Ala.	Smith, John Francis	
Smith, Clarence Irving, Jr.	D.C.	A.B. 1951, Emory University	Md.
Smith, Claudia Elizabeth	Va.	Smith, John Raymond	
Smith, Clyde E. Jr.	W.Va.	B.S. 1950, Frostburg State Teachers	D.C.
B.S. 1942, Washington and Lee		College	
University		Smith, Joseph Edward	
Smith, Clvn Tolbert	Ark.	B.S. 1951, Georgetown University	Va.
Smith, Darrell Fenwick	Ariz.	Smith, Kirk Brannam	Va.
Smith, Delos Grosvenor, Jr.	D.C.	Smith, Leland Wrightman	D.C.
A.B. 1950, Yale University		Smith, Lloyd Winfield	Va.
Smith, Donald David	Md.	Smith, Luther Earl	
Smith, Donald Joseph	Pa.	A.B. in Govt. 1951, The George	
B.S. in Ch.E. 1950, Bucknell University		Washington University	
Smith, Dorothy	Md.	Smith, Mansfield Ferry Williams	
Smith, Edgar Thomas	Pa.	Smith, Marvin Franklin	
B.S. 1951, Pennsylvania Military		Smith, Mary Louise	
College		B.S. 1926, University of Chicago	Md.
Smith, Edith Ann	D.C.	Smith, Mea Clyd	D.C.
A.B. 1945, Arizona State College		A.B. 1917, University of Texas	
Smith, Edward	Va.	Smith, Mildred Jonathan	
B.B.A. 1940, University of Texas		A.B. 1945, Bryn Mawr College	
Smith, Edward Anthony	D.C.	Smith, Minnie Alma	
Smith, Edward Naumen	Md.	Smith, Noah Mack	
A.B. 1947, Middlebury College		Smith, Patricia Siebert	
Smith, Edward Polk Tatum, Jr.	Pa.	A.B. 1952, The George Washington	
B.S. in E.E. 1943, U.S. Naval		University	
Academy		Smith, Paul Arnton	
L.I.B. 1950, Washington and Lee		Smith, Paul Pearce	
University		Smith, Philip, Hillyer, Jr.	
Smith, Elbert Keener	Va.	A.B. 1947, Harvard University	
Smith, Eleanor Sue	D.C.	Smith, Ralph Anson	
B.S. 1942, Mississippi State College		A.B. 1917, U.S. Naval Academy	
Smith, Emory Conway	Md.	M.S. in Eng. 1941, Massachusetts	
Smith, Eugene Vincent	Md.	Institute of Technology	
Smith, Frances Caldwell	Va.	Smith, Ralph Edwin	
A.B. 1935, William and Mary College		Smith, Raymond Harold	
Smith, Frank Curtis	Va.	Smith, Rebecca Anne	
Smith, Frank White	Md.	Smith, Richard	
Smith, Frederick, Henry, Jr.	Mass.	A.B. 1951, University of Alabama	
Smith, French Crawford	Md.	Smith, Richard B.	
Smith, George Peter	D.C.	Smith, Richard Hunter	
B.M.E. 1950, Cornell University		Smith, Richard Thomas	
Smith, George Wright	Fla.	Smith, Robert Eugene	
Smith, Grady Fay	Ohio	Smith, Robert Louis	
Smith, Harold	N.Y.	Smith, Robert Ross	
A.B. 1951, The George Washington		Smith, Robert Sams	
University		A.B. 1952, The George Washington	
Smith, Harold Calmes, Jr.	Md.	University	
A.B. 1950, The George Washington		Smith, Robert Tynes III	
University		A.B. 1948, The George Washington	
Smith, Harry Paul	Pa.	University	
Smith, Harry Ray, Jr.	Iowa	Smith, Rosemary Webster	
Smith, Harry Richard	W.Va.	A.B. 1938, St. Lawrence University	
Smith, Huddins Roberts	Va.	Smith, Samuel Edward	
B.S. 1942, Georgetown University		Smith, Shirley Susan	
Smith, J. Bert	D.C.	Smith, Spencer Ringgold	
Smith, J. Gordon	Md.	A.B. 1937, Yale University	
Smith, Jacob Paul	Pa.	Smith, Stuart Mayoh	
Smith, James Donald	Nebr.	Smith, Stuart Stump	
A.B. 1941, University of Omaha		Smith, Thelma Joyce	
A.M. 1944, Western Reserve		Smith, Theresa Buisin	
University		Smith, Thomas Benjamin	

Smith, Thomas Eugene	Mo.	Sodd, Mary Ann	D.C.
B.S. 1951, Missouri School of Mines		B.S. 1952, The George Washington University	
Smith, Thomas Lewis	Md.	Soffen, Marvin Clarence	D.C.
Smith, Timothy Edward	Md.	B.Chem. Eng. 1949, Cornell University	
A.B. 1927, Swarthmore College		Soffen, Rachel Phyllis	D.C.
A.M. 1935, New Jersey State Teachers College, Upper Montclair		B.S. in Ed. 1952, University of Pennsylvania	
Smith, Verna Emily	D.C.	Sohr, William Charles	Md.
A.B. 1951, The George Washington University		Sokolowsky, William	N.Y.
Smith, Virginia Vandora	D.C.	A.B. 1951, The George Washington University	
Smith, Walker William	Va.	Solano, Junio Alberto	D.C.
A.B. 1950, The George Washington University		Solem, Charles Henry	Va.
Smith, Walter J.	D.C.	A.B. 1950, St. Olaf College	
B.S. 1952, University of Denver		Solem, JoAnn Marie	D.C.
Smith, Warren Lee	D.C.	A.B. 1951, St. Olaf College	
A.B. 1950, Muhlenberg College		Soley, Edna Constance	Md.
Smith, Wayne Leroy	D.C.	Solia, Arnold	Ill.
Smith, William Brice	Va.	Sollers, Virginia Dare	Md.
A.B. 1952, Lynchburg College		B.S. 1949, Johns Hopkins University	
Smith, William Parkhurst, Jr.	D.C.	Sollins, Nancy Thorber	Md.
Smith, William Patrick	D.C.	A.B. 1945, The George Washington University	
Smith, William Preston, Jr.	D.C.	Sollitt, William	Kans.
Smithbauer, Donald Joseph	Mich.	Solomon, Alvin Lee	D.C.
Smithson, Joseph Allen	D.C.	Solomon, Sylvan Emanuel	D.C.
Smolensky, Clyde Elmer	D.C.	Solomonson, Carl Edward	Ohio
Smolensky, Natalie Joan	Md.	B.S. 1950, Western Reserve University	
Smock, Mary Carla	D.C.	Solt, Samuel James	Md.
Smymiotis, Pauline Zoe	Pa.	Soltow, William Donald, Jr.	Md.
B.S. 1948, The George Washington University		B.M.E. 1948, Rensselaer Polytechnic Institute	
Smyth, Constantine Joseph	D.C.	Somer, Audrey Marie	W.Va.
Sneely, Carl Miller, Jr.	Pa.	A.B. 1948, University of Missouri	
Snell, Earl Masdon	Va.	Somerville, Dorothy Dix	D.C.
Snyder, Roy Edward	D.C.	Sommer, Edmund Totton, Jr.	D.C.
Snyder, Frankie Louise	Ohio	Sommers, Alice	D.C.
Sneable, John Kinsey	Ill.	A.B. 1923, Smith College	
A.B. 1946, Dartmouth University		Sommers, Diane Kallin	Va.
M.S. 1952, Northwestern University		A.B. 1947, Stanford University	
Sodergrass, Ernest Walter	W.Va.	Sommers, Robert Glenn	Va.
A.B. 1952, Montana Harvey College		Sondheim, Bernice	D.C.
A.M. 1949, West Virginia University		Sontag, Ralph Ingram	D.C.
Soderstrom, Paul David	Va.	Sonther, Arthur Fuller	Va.
Sosa, Boris Daley	D.C.	Sookmak, Vichitra	Md.
Sosa, Robert C.	Utah	Sopkia, Stephen Joseph	Pa.
Sosa, Sandra Lucy	D.C.	B.S. 1940, University of Scranton	
Sosa, Thomas Lawrence	D.C.	Soria, Paul Lawrence	Va.
Sosulski, John Garrie	N.Y.	Sorell, Frederick Maurice	Va.
Sosulski, Charles Edmund	N.D.	Sorell, Richard Alexander	Md.
Sosulski, Charles L., III	Mich.	Sosnowik, Lewis	D.C.
B.S. 1951, University of Pittsburgh	D.C.	Sotter, Erica Jane	Va.
Sosulski, David Deak	Conn.	Souce, Frank James	Va.
B.S. 1952, Northwestern University		B.E.E. 1948, The George Washington University	
Snyder, Ernest Mayo	N.J.	Sotter, Shirley Ann	Md.
Snyder, Esther Anne	D.C.	South, Margaret Kathleen	D.C.
Snyder, Gerald Joseph	D.C.	Southall, Helen Lee	Va.
Snyder, Helen Elaine	Va.	Spacensky, Anne Caroline	Pa.
Snyder, Leonard R.	N.Y.	Spaeth, Sister Mary Theodore	Pa.
A.B. 1951, Cornell University		Spaul, Giles Henry	D.C.
A.B. 1952, University of Missouri		Spangle, Clarence Wilbur	Va.
Snyder, Mark Curtis	Md.	B.F. 1945, Yale University	
Snyder, Taylor Charles, Jr.	D.C.	Spanier, Donald Raymond	Pa.
Snyder, Valerie Hill	D.C.	A.B. 1951, Duquesne University	
Snyder, William Junior	D.C.	Spangler, Ronald Tive, Jr.	Pa.
Solomon, Bernard George	D.C.	A.B. 1952, Duke University	
Solomon, Annette	D.C.	Spahn, George Klepfer	Md.
Solomon, Catherine Popp	D.C.	Spahr, Walter Joe	D.C.
A.B. 1945, Duquesne University		I.L.B. 1952, The George Washington University	
Solomon, Olga	Md.		
Solomon, Milton Joseph	D.C.		
B.S. 1950, University of Maryland	Md.		

Sparks, Lemuel Columbus, Jr. A.B. 1940, Roanoke College B.D. 1943, Lutheran Theological Seminary					
Sparks, Morris Murray Spatz, Sol B.E.E. 1950, Pratt Institute	N.Y.	Spinelli, Marco Peter Spinner, Donald Burke Spiro, Jacqueline Spitz, Anna Hagstrom Spitzer, Joseph William Spitzer, Lillemor Elena Spiva, Harriet Waters Spivey, Mattie Rae B.S. 1941, Texas State College for Women			Miss D.C. D.C. N.Y. D.C. D.C. Miss
Spaulding, Jo Anne A.B. 1950, The George Washington University					
Spaulding, John Henry A.B. 1949, The George Washington University	D.C.	M.S. 1947, Iowa State College Splaine, Elizabeth Frances Spock, John Paul A.B. 1950, University of Maryland			Miss Pa. Va. N.Y.
Speake, Nancy Anne Speaker, Dora Elaine Spear, Harvey Milton A.B. 1942, Brown University L.L.B. 1948, Harvard University A.M. 1949, LL.M. 1952, The George Washington University					
Spearbeck, Edward Dever Spector, Virginia Elliott Spector, William Samuel B.S. 1950, A.M. 1951, The George Washington University					
Speer, Richard Albert B. Met. E. 1952, Ohio State University	Ohio	Spozaiz, Laimonis Sprague, Gerald Emerson Sprawcew, Phillip Temolei Sprenger, Carole Springston, Hubert Farnsworth A.B. 1946, Fairmont State College Spritzer, Lorraine Nelson A.B. 1944, University of Alabama			D.C. D.C. Miss Va.
Speer, William Thomas, Jr. Sprevaek, Harold Lynn B.S. 1949, Ohio University	M.I. Ohio				
Spelman, Grace Elizabeth B.S.E. 1929, Massachusetts State Teachers College, Framingham	D.C.				
Spence, Charles E., Jr. A.B. in Govt. 1950, The George Washington University	Idaho	Sprock, Ernest Myrl A.B. in Govt. 1950, The George Washington University			D.C. Texas
Spencer, Claron Chipman Spencer, Della Ruth Spencer, George Henry B.E. 1948, Yale University L.L.B. 1952, Cornell University	D.C. D.C. N.Y.				
Spencer, Helen Mather Spencer, Louise Persamon Spencer, Maurice Vernon Spencer, Ray Spencer, Richard Overton Spencer, Thomas Klunder B.S. 1949, U.S. Military Academy	D.C. D.C. Calif. Va. Va. Va.	Srenack, Stanley Edward Srnska, John Armand A.B. 1950, Mount St. Mary's College Sroka, Edward Andrew B.S. 1941, Purdue University Stachniewicz, Gloria Patricia A.B. 1949, University of California Stashowak, Edward Joseph B.S. 1951, University of Pittsburgh Stafford, Beres Ann B.S. 1949, University of Maryland Stafford, Walter Edward Stafford, William Thomas Stadul, Erma Jean Stagner, Marilyn Leanne Stahl, Seymour B.S. 1949, University of Miami Stallsmith, William Paul, Jr. A.B. 1950, The George Washington University			Miss Pa. Calif. Pa. Md. Va. D.C. Md. Va. D.C. Md. Pa.
Spending, Allen Aaron A.B. 1946, College of the City of New York					
Spending, Arnold Spending, Samuel A.B. 1950, M.S. 1950, College of the City of New York B.S. 1952, University of Pittsburgh					
Sperring, Thomas Andrew B.S. 1952, University of Pittsburgh	Pa.				
Sperry, Iowan I. Sperry, Robert Malcolm B.S. 1950, Bucknell University	D.C. N.J.				
Spessard, Martin Claude B.S. 1950, Wake Forest College	Md.				
Spevak, Herbert Spicer, Harry Sherwood Spigler, Robert Lee Spies, Howard Lester Spies, Mark Franklin Spiker, Conradine Leigh Spiker, Donald Aze A.B. in Govt. 1951, The George Washington University	D.C. Ohio Ohio Ohio Va. D.C. D.C.	Stambaugh, Harold Eugene B.S. in Econ. 1948, University of Pennsylvania Stamer, Stuart Owen A.B. 1951, College of the City of New York Stames, Nick Frank Stamper, William Clark Stanell, Betty Josephine Stancill, James McNeil, Jr.			N.Y. Fla. Va. N.C. D.C.
Spindler, William Everett, Jr.	D.C.				

Stander, Maxwell	Md.	Stein, Stefan Martin	N.Y.
B.S. 1942, College of the City of New York		A.B. 1948, Cornell University	
Stanfield, Florence Virgene	D.C.	Steinberg, Gloria Ann	D.C.
Stanford, Harry Forester	Calif.	Steinberg, Harvey Bert	Va.
Stance, William Herman	Md.	Steinberg, Janet Lee	D.C.
Stancour, Arnold George Edwin	S.D.	Steinem, Gloria Marie	D.C.
Stanlope, Jane Summers	D.C.	Steiner, Otto Thomas	Md.
A.B. 1952, The George Washington University		A.B. 1949, The George Washington University	
Stanhope, Thomas Alfred	D.C.	Steiner, William	D.C.
A.B. 1950, University of Maryland		Steinert, Leon Albert	D.C.
Stanisavljevic, Nikola Dragisha	Yugoslavia	A.B. 1952, La Sierra College	
Stange, Janet M.	Va.	Steinhilber, Helen Louise	Ohio
A.B. 1945, American International College		Steininger, Eugene Beachel	Pa.
Stansberry, Chadwick Leroy	D.C.	A.B. in Govt. 1940, The George Washington University	
Stanfield, James Arthur	Wash.	Steinman, Walter Franklin	Pa.
B.S. 1949, Washington State College		B.S. 1950, M.S. 1951, Pennsylvania State College	
Stanwich, Lillian Ann	D.C.	Stelck, William Ardell	Iowa
Stanziaro, Margaret Josephine	Va.	A.B. 1949, Drake University	
Stapleford, LeRoy Brown	Md.	A.M. 1950, The George Washington University	
Staples, Stanley Foster	Va.	Stell, Jack Powell	Va.
Stetler, Enoch Thomas	D.C.	A.B. 1938, Rice Institute	
M.S. 1938, University of Arkansas		A.M. 1942, University of Houston	
Stirling, Ralphine Ronald	Oreg.	Stell, William Marlin	Va.
A.B. 1916, University of Oregon		A.B. 1941, The George Washington University	
A.M. 1941, Louisiana State University		Stelott, Arthur Simon	N.J.
Stark, John Regan	Va.	B.S. 1946, U.S. Naval Academy	
A.B. 1918, Cornell University		Stempson, Oscar William Jr.	Minn.
M.B.A. 1946, New York University		Stenger, Howard William	D.C.
Stanbin, Abraham Fred	Md.	Stenger, James Edward	Neb.
B.S. in E.E. 1950, University of Maryland		Stephanadis, Steve Demetrios	N.C.
Starr, Celia	D.C.	Stephens, Durward Vinnell	D.C.
Starr, Myron Maffin	D.C.	Stephens, Gertrude Johnson	Aa.
Starr, Selie	Md.	Stephens, Isabel Allred	D.C.
A.B. 1940, Brooklyn College		Stephens, John	Fla.
A.M. 1951, The George Washington University		A.B. 1946, The George Washington University	
Stanzell, Dorothy Nelson	Md.	Stephens, John Vernon	Md.
Stanopoulou, Jeannette	D.C.	B.S. 1949, Iowa State College	
Stanard, Edward Morris	D.C.	Stephens, Marvin Massey	Ala.
Stata, Helen Anna	D.C.	B.S. 1923, U.S. Naval Academy	
Staver, Evelyn Jane	Va.	M.S. 1911, Pennsylvania State College	
Stavrikas, Anna Catherine	D.C.	Stephens, Richard Glenn	Ind.
Steadman, Frank McNaulty, Jr.	Va.	B.S. in E.E. 1948, Purdue University	
Stearns, Dorcas Ann	Va.	Stephens, Robert Edward	Va.
A.B. 1948, Denver University		Stephens, Virginia Bush	D.C.
Stearns, Joan	D.C.	A.B. 1906, University of Utah	
Stethens, William Cooper	N.Y.	Stephenson, Charles Raymond III	N.Y.
A.B. 1901, Yale University		B.N.S. 1946, College of the Holy Cross	
Stetko, Michael LaMax	Fla.	Stephenson, Donald Lee	Wyo.
B.S. 1952, Georgetown University		B.S. in F.S. 1949, Georgetown University	
Steele, Claire Gladys	D.C.	Stephenson, Fewson Granum	D.C.
Steen, Arthur D.	N.C.	Stephenson, Juanita Mudd	D.C.
A.B. 1945, Elon College		Stergiou, Emmanuel George	D.C.
F.M. 1943, University of North Carolina		Sterling, Benjamin Franklin, Jr.	Texas
Steen, Robert Leland	W.Va.	B.S. 1951, Baylor University	
A.B. 1940, Marquette College		Sterling, John Martin	Md.
Steffay, Richard Carlisle	Va.	Stern, Edward Arthur	Fla.
A.B. 1913, Roanoke College		A.B. 1952, University of Florida	
Steger, Kenneth Meritt	Va.	Stern, Estelle	D.C.
Stein, Alice Boschan	D.C.	Stern, Howard S.	N.Y.
Stein, Claire	Md.	B.S. 1950, Brooklyn College	
Stein, Helen Louise	D.C.	A.M. 1952, The George Washington University	
Stein, Lois Bildman	D.C.	Stern, Iere Bart	D.C.
Stein, Norman Albert	D.C.	Sternberg, Arnold Charles	Mass.
Stein, Paula M.	D.C.	A.B. 1947, University of Wisconsin	
Stein, Selman	D.C.		

Sternberg, Hyman Max	Md.	Stilling, Donald Justesen	D.C.
A.B. 1942, Brooklyn College		Stilmar, Robert Louis	Pa.
Sterner, Raymond Edward	Md.	B.E. 1910, Yale University	
Stetson, Georgianna Louise	Md.	Stilwell, John Pierce	D.C.
Steuer, Arthur	D.C.	A.B. 1951, University of Georgia	Ala.
Stevens, Cecil	Leeward Islands	Stimson, Richard D., Jr.	Ala.
B.S. 1949, Smith College		Stine, Janice Joan	W.Va.
Stevens, Charles White, Jr.	Md.	Stine, Janet Brown	Ala.
Stevens, Ernest Evans	D.C.	A.B. 1949, Oberlin College	
B.S. 1919, U.S. Naval Academy		Stine, Oscar Cebren	
A.M. in Ed. 1951, The George Washington University		A.B. 1950, Oberlin College	
Stevens, Ethel Jean	Calif.	Stingle, Howard Ellsworth	Va.
Stevens, Francis Bowden	N.Y.	A.B. 1942, A.M. in Ed. 1947, The George Washington University	D.C.
A.B. 1926, LL.D. 1951, Union College		Stinnett, Robert Tim	
Stevens, Martha Ann	D.C.	Stirling, Edwin Tillman	
Stevens, Nancy Reynolds	Va.	B.S. 1951, The George Washington University	Va.
A.B. 1952, The George Washington University		Stiteler, William Lloyd, Jr.	D.C.
Stevens, Raymond Grant	N.C.	B.S. 1952, East Carolina College	
A.B. 1948, University of Iowa		Stitelman Joseph	Va.
Stevens, Robert Burns	D.C.	B.S. in E.E. 1914, Cooper Union	Va.
A.B. 1948, The George Washington University		Stuth, James Logan	
A.M. 1950, Catholic University of America		Stutt, Nelson Alexander	
Stevenson, Eugene Octave Sykes	D.C.	A.B. 1918, University of Pittsburgh	Va.
Stevenson, Gertrude Brothers	D.C.	LL.B. 1952, The George Washington University	Ill.
Stevenson, Harold Forest	Pa.	Stober, Alfred Karl	
B.S. in F.S. 1952, Georgetown University		Stockman, John Joseph	D.C.
Stevenson, Malcolm Searle	Va.	M.E. 1950, University of Illinois	Va.
A.B. 1950, Bowdoin College	None	Stockton, Alicia Janet	Ala.
Stewart, Anne English	Va.	Stockton, John Bone	
Stewart, Arthur Gilbert	Maine	Stockton, John Milton	D.C.
B.S. in Ed. 1937, Wilson Teachers College		A.B. 1951, LL.B. 1948, University of Alabama	Pa.
Stewart, Barbara Hinton	Va.	Stockwell, Carolyn Coffey	Va.
Stewart, Charles Todd, Jr.	Md.	Stoddard, Vene Ivan	Ala.
A.B. 1946, A.M. 1948, The George Washington University		Stoehr, Peter Jack	
Stewart, David Benjamin		Stoess, Karl Heintz	Md.
A.B. 1951, A.M. 1952, Harvard University	Maine	LL.B. 1950, University of Erlangen, Germany	
Stewart, Dorothy Konopask	Conn.	Stofko, Stephen James, Jr.	Va.
A.B. 1950, Boston University		B.S. 1949, University of Maryland	Pa.
Stewart, Howard Nau	Va.	Stonsdill, Marion Russell	N.J.
Stewart, Jonas Hartsell	Ala.	Stokas, John Michael	
B.S. 1940, Alabama Polytechnic Institute		Stokes, Birney Aurel	Md.
Stewart, Merrick Wood	Md.	B.S. 1948, Pennsylvania State College	Pa.
B.S. in M.E. 1947, University of Maryland		B.S. 1951, Georgetown University	Calif.
Stewart, Milton David	N.Y.	Stokes, Elva George	
A.B. 1941, New York University		Stokes, James Warren	
M.S. 1942, Columbia University		Stokes, June E.	
Stewart, Noble Ellsworth	Va.	Stokes, Theodore Hudson, Jr.	D.C.
Stewart, Pearl Blanch	Md.	B.S. 1941, University of Southern California	Md.
Stewart, S. Grant	Okla.	Stokes, Turner van Cortlandt	
B.S. 1914, University of Nebraska		Stolarski, Beverly Barley	D.C.
Stickley, Allen Raymond, Jr.	D.C.	A.B. 1948, The George Washington University	
Stickley, Webster Bradley	Va.	Stolwein, Walter	Ind.
B.S. 1951, Madison College		B.S. 1912, College of the City of New York	
Stickney, William Wallace III	Md.	Stolwy, Albert Donald	Ala.
Stief, Edward Don	Va.	B.S. in E.E. 1949, Ross Polytechnic Institute	Pa.
Stiefel, Maurice Ben	Pa.	Stone, Cora Louville	D.C.
B.S. 1951, University of Pennsylvania		Stone, Dwight H.	
Stigers, Donald William	Pa.	Stone, Helen Seegar	Ala.
A.B. in Govt. 1950, The George Washington University		A.B. 1916, Northwestern University	Okla.
Still, Jov Dancin	Md.	A.M. 1949, The George Washington University	
A.B. 1940, Hunter College		Stone, Robert Oliver	
		Stone, Rodney Alan	
		B.S. 1950, Tulsa University	

Stone, Walter Kersten	Md.	Straw, Leo Shanley	D.C.
Stoneman, Patricia Ray	Wis.	B.S. in C.E. 1939, South Dakota State College of Agriculture and Mechanic Arts	
A.B. 1952, The George Washington University			
Stoner, Gerald Hiram	Calif.	Strawser, Antoinette Bozievich	Md.
A.B. 1942, M.B.A. 1949, Stanford University		Strawser, Neil Edward	Ohio
Stopak, Jacob Henry	D.C.	A.B. 1951, Oberlin College	
B.S. 1949, Georgetown University		Stray, Estelle Marie	D.C.
M.S. 1950, The George Washington University		A.B. 1930, University of California at Los Angeles	
Stopak, Julius Harvey	D.C.	Strayer, Earl Waldo	Va.
B.S. 1952, University of Maryland		Streibich, Harold Cecil	Miss.
Stoppelli, Louis Francis	N.J.	A.B. 1949, University of Tennessee	
Stopera, Dolores A.	Mass.	Streitz, Clare J.	Pa.
Storm, James Arthur	Va.	L.L.B. 1949, L.L.M. 1950, The George Washington University	
Storm, Matthew	N.Y.	Stricker, Eugene Irwin	D.C.
B.S. 1951, University of Pennsylvania		Stricksberg, Albert Roden	Ohio
Stormont, Beverly Buchanan	Wis.	A.B. 1950, Yale University	
Stormont, James Russell	Wis.	Strieby, LaRue Thomson	D.C.
Store, Horace Edwin	D.C.	Striker, Corinne Medrith	Va.
A.B. 1952, The George Washington University		Strinow, Julius Steven	Md.
Stoupe, Elizabeth Jane	Fla.	Stroilo, Mary B.	D.C.
Stout, Curtis Montague	Md.	Strong, Corrin Peter	D.C.
Stour, Robert Eugene	Va.	A.B. 1948, Yale University	
A.B. 1949, Iowa State Teachers College		Stronski, Gerald Edward	Mich.
Stovall, Milton A'va	Md.	B.S. 1950, Wayne University	
Stover, James Robert	Va.	Strother, Greenville Kash	D.C.
B.M.F. 1950, Catholic University of America		B.S. 1941, Virginia Polytechnic Institute	
Stover, Joseph Glenn	Pa.	Strott, Mary Colton	Va.
A.B. 1950, Dickinson College		Stroup, Paul Byron	Md.
Stover, Lloyd Vernon	D.C.	Strupp, Hans Hermann	D.C.
L.L.B. 1951, University of Miami		A.B. 1945, A.M. 1947, The George Washington University	
Stover, Percy Hayes, Jr.	W.Va.	Strupp, Werner	Md.
A.B. 1920, Randolph-Macon Women's College	Md.	A.B. 1940, The George Washington University	
Strachan, Jean Hamilton	D.C.	Struthers, Melvin, Jr.	D.C.
A.M. 1935, University of Edinburgh		Stuart, Barbara Lynn	Md.
Ph.D. 1937, University of Heidelberg		Stuart, David Loring	Va.
Strakna, Rita Anna	Conn.	Stuart, Grace Lyon	D.C.
A.B. 1947, University of Connecticut		A.B. 1935, Maryville College	
A.M. 1950, Radcliffe College		Stuart, Judy Reno	Va.
Strakna, Robert Ernest	Conn.	Stuart, Kenneth Earl	Ind.
A.B. 1952, University of Connecticut		Stuart, Nina Kimberly	D.C.
Strank, Jean	D.C.	Stuart, Paul Neal	Okla.
Strank, Vincent George, Jr.	Md.	Stuart, Walter James	Va.
Strasser, Norl Faine	Ky.	B.S. 1924, U.S. Naval Academy	
Strates, Anatha	D.C.	Stuart, William	Md.
Stratton, Eugene Aubrey	Mass.	Stubbs, Jane Augusta	Md.
A.P. 1951, The George Washington University		Stubbs, Kathryn Anne	Md.
Stratton, Lydia Anne	Va.	Studda, Granville Murray	Va.
A.B. 1944, Wellesley College		Sturdivant, Mary A.	D.C.
L.L.B. 1947, Yale University		Sturgeon, John Dickinson	D.C.
Stratton, Sidney Junior	D.C.	Sturm, Bob Lee	Okla.
Stratton, Thomas Joseph	Md.	Sturm, Herman Mark	D.C.
B.S. 1950, Georgetown University		A.B. 1938, Brooklyn College	
Straus, Hans	D.C.	A.M. 1940, American University	
L.L.D. 1925, Cologne University		Sturt, Daniel Webster	Va.
Straus, Iris May	N.Y.	B.S. 1947, Virginia Polytechnic Institute	
B.S. 1949, College of the City of New York		M.S. 1949, University of Wisconsin	
Strasser, Robert Edward	D.C.	Stutz, Frank August	D.C.
B.S. in E.E. 1950, Pennsylvania State College		B.S. 1934, Lehigh University	
		A.M. 1940, The George Washington University	
		Suarez, Libia Emira	Colombia
		Suhlen, James Whitley	D.C.
		B.S. 1928, Mississippi State College	
		A.M. 1930, The George Washington University	

Suddarth, Doris Smith	Va.	Sutton, Harold Griffith, Jr.	Md.
Suddath, William O'Neal	D.C.	A.B. 1951, Amherst College	W Va.
B.S. 1945, U.S. Naval Academy		Sutton, Irene Hill	Tenn.
Sudduth, Doris Claire	D.C.	A.B. 1949, Shepherd College	Calif.
Sudduth, Frances Anne	D.C.	Sutton, Jack Delona	
Sugar, Harold Samuel	D.C.	Sutton, Nancy Irene	
A.B. 1940, The George Washington University		A.B. 1948, University of California at Berkeley	Md.
Sugden, Robert Greenwood	Va.	Sutton, Sarah Hale	D.C.
A.B. 1948, LaFayette College		Suzuki, Ko	Japan
Sugerman, Martin Lee	Pa.	Suzuki, Tateo	Md.
Suglia, Thomas Anthony	Minn.	Suzuki, Ukiko Dorothy	New York
Sullinger, Carl White	Md.	Svennaxen, Tormod Petter	D.C.
Sullins, Van Buren	D.C.	Swaine, Adrienne Ina	Texas
A.B. 1952, The George Washington University		Swann, Earl Stanley	
Sullivan, Daniel David	N.Y.	Swanner, Joe Bailey	Texas
Sullivan, Donal Emmett	Md.	Swanner, Regina	D.C.
A.B. 1941, M.S. 1942, Fordham University		Swanson, Arthur Adams	
Sullivan, James Ernest	Va.	B.S. 1952, Massachusetts Institute of Technology	Tenn.
Sullivan, James Richard	Md.	Swanson, Ivan James	D.C.
Sullivan, Mary Elizabeth	Fla.	Swanson, Joan Coffin	
Sullivan, Patrick Gerald	Texas	A.B. 1951, Boston University	D.C.
B.S. in M.E. 1940, University of Texas		Swanson, Kathryn Vivian	Calif.
Sullivan, Ralph Hall	Mass.	Swanson, Lawrence M.	D.C.
B.B.A. 1942, Boston University		Swanson, Monroe Soren	Mo.
M.S. 1940, Simmons College		Swanson, Virginia Anne	Iowa
LL.B. 1952, The George Washington University		Swarthout, Joan Sosamon	Md.
Sullivan, Ray Anthony	Va.	Swartz, Dorothy Lucille	D.C.
Sullivan, Richard Carroll	Va.	Swartz, Frederick	D.C.
Sullivan, Ronald Frederick	Calif.	Swartzendruber, Earl Lewis	Minn.
A.B. 1951, Stanford University		Swasdburi, Preecha	
Sullivan, William Franklin	Md.	Swayne, Robert Elliott	D.C.
Sult, Marjorie Rose	D.C.	A.B. 1941, University of Minnesota	
Sumiya, Kiyoshi	Japan	Swearingen, Lynn Leroy	Pa.
Summer, Leonard	N.Y.	A.B. 1941, Sioux Falls College	Ill.
B.S. 1911, M.S. 1918, College of the City of New York		A.M. 1911, State University of Iowa	
Summers, Charles Russell	Va.	Swedlund, JoAnn Louise	
A.B. 1916, A.M. 1918, State College of Washington		Sweeche, Edward Charles	D.C.
Summers, Clifford Clinton	Md.	A.B. 1951, The George Washington University	Ill.
A.B. 1941, University of Missouri		Sweeney, Ann Reed	
Summers, James Aubrey, Jr.	D.C.	Sweeney, Edwin Cornelius	Md.
Summerville, David Harold	Pa.	A.B. 1950, University of Kentucky	Md.
A.B. 1952, Grove City College		M.D. 1942, Tulane University	
Sumner, Patsy Ruth	Ohio	Sweeney, Robert Lawrence	Conn.
Sumson, Spafford Ray	Utah	Sweeney, Stuart Hackstaff	
Sunday, Emery Harold, Jr.	Va.	A.B. 1940, Upsala College	D.C.
Sunday, Helen Christina	D.C.	Sweeney, Thomas Francis	
A.B. in L.S. 1915, The George Washington University		B.S. 1940, Georgetown University	Md.
Sunderman, Helen Lorraine	Ill.	Sweeney, Vincent Hilary	D.C.
Sundstrom, Gunnar John	D.C.	B.S. 1940, Boston College	D.C.
Sundquist, Marjorie Louise	Nebr.	Sweeney, Isabelle	Mo.
Surasky, Bernard Arthur	D.C.	Swenarton, Robert Owen	
A.B. 1950, The George Washington University		Swenarton, Rose Owen	
Surasky, Mary	D.C.	Sweney, Robert Louis	Md.
Surasky, Robert D.	D.C.	A.B. 1948, LL.B. 1951, St. Louis University	
Surgen, Raymond Charles	Md.	Swenson, Dale Ellard	Va.
Surmick, George Arthur	Ind.	A.B. 1940, Gustavus Adolphus College	D.C.
Suro-Pico, Alfonso	D.C.	Swenson, Lillie Marie	Mass.
B.S. 1912, University of Puerto Rico		Swetnam, George Dayton	Pa.
Suter, Roger Howard	Mass.	Swett, Carlton Edward	D.C.
Sutherland, Gertrude Hardy	Md.	A.B. 1950, Bowdoin College	Va.
Sutherland, Mae	Pa.	Swetz, Patricia	
Sutherland, Margaret Zumbolo	N.Y.	Swiggard, Edward Morris	Va.
Sutphin, Benjamin Van	Md.	Swinson, Nadine Emila	
		B.S. 1950, Madison College	
		Swisher, James Edwin	

Students Registered

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Switz, Richard Jay B.S. in C.E. 1950, Purdue University	Va.	Tang, Shao-Yu A.B. 1946, Central Institute of Political Science, Chungking	D.C.
Switzer, Ann Lamar A.B. 1952, The George Washington University	Va. D.C.	A.M. 1951, The American University Tang, Tze-tung B.S. 1949, St. Mary's College M.S. 1951, The George Washington University	D.C.
Spikes, Edward George B.S. 1951, University of Maryland	Wash.	Tanner, Billy Gene Tanner, Robert Lee Tanner, William Ashley B.S. 1948, Western Maryland College	Ky. D.C. Va.
Spikes, Grant Russell B.B.A. 1950, Tulane University A.M. in Govt. 1951, The George Washington University	Va.	Tannhäuser, John Ulrich A.B. 1901, The George Washington University	Md.
Spikes, Horace Fennell Spikes, Richard Tucker Sylvester, Robert Watson A.B. 1951, A.M. 1952, The George Washington University	Md. Calif. Va.	Tanos, James Dinatri A.B. 1942, University of Pennsylvania	Va.
Simmes, Courtland Synan, Anne Rutes Sachidan, Andrew Joseph B.S. 1950, Canisius College	D.C. D.C. N.Y.	Tanzman, Janet Sybil Tao, Lillian Lee Tappe, William McKee Tardosky, Arthur Joseph Tart, Nelson Monroe B.S. 1949, Wake Forest College	Va. D.C. D.C. Md. N.C.
Sokolazky, Joseph Steven Szymanski, Albin Sawer, Michael Sawer, Peter Sawer, Clarence Francis B.S. 1952, The George Washington University	N.J. Md. Va. Md. Pa.	Tasaka, Edna Haruno Tasaka, Toshio B.S. 1951, New York University	D.C. D.C.
Szymanowski, Robert Harold	Wis.	Taske, Marilyn Gorschman Taske, Morton Jerome Tassin, James Stanley A.B. 1938, Northwestern State College of Louisiana	Md. D.C. Va.
T			
Tabibi, Abdul Hakim A.B. 1948, University of Kabul, India	India	Tate, Dorothy White A.B. 1947, Hoffman College	Va.
Taconelli, Dominic Joseph Taeves, Anne Taffel, Samuel L. A.B. 1950, New York University	Pa. D.C. D.C.	Tate, James Frank, Jr. A.B. 1949, Alfred University	Va.
Taffer, Hana A.B. 1949, The George Washington University	N.Y.	Tate, Marilyn Joan Tatone, Delores Linda Tatum, Rachel B.	Va. O. D.C. D.C.
Taffer, Matilda Perl Tatool, Albert Edward Tavares, Theresa Marie Takachshi, Samuel Masami B.S. 1950, American University	N.Y. D.C. N.Y. Md.	Tauber, Lilly Katherine A.B. 1947, Peter Pazmany University of Budapest	D.C.
Takamine, Hirono Takane, George Morito A.B. 1950, University of Hawaii	Okinawa Hawaii	Taubman, Nettie Taugner, Mary Snyder B.S. 1947, Northeast Missouri State Teachers College	D.C. Va.
Takemoto, Kenneth Kaname B.S. 1949, M.S. 1950, The George Washington University	Hawaii	Tavares, Benildo Moura Tawney, Ruth Brennan Taylor, Ada Elizabeth A.B. in Ed. 1940, The George Washington University	D.C. Calif. Va.
Talbott, Donna Jean Talbott, Barbara Lee Talbott, Robert Edward A.B. 1951, Syracuse University	W.Va. D.C. Va.	Taylor, Andrew Eustace B.S. in M.E. 1947, Tufts College	D.C.
Talbot, Cay Helen Talpalar, Jay Taltan, Roland Talmadge, Jr. Tamer, Joseph Jacob Tamilia, Catherine B. Tan, Chuan Phi Tanaka, Hayme William A.B. 1950, University of California at Los Angeles	Calif. D.C. Va. D.C. Pa. Thailand Calif.	Taylor, Carl Thomas Taylor, Daniel Gerald A.B. 1949, Salem College Taylor, Daniel Raymond B.S. 1951, Drexel Institute of Technology	W.Va. Md.
Tanaka, Henry Akira A.B. 1951, University of North Carolina	Hawaii Mass.	Taylor, Dorothy Angie Taylor, Dorothy Jane A.B. 1943, Rice Institute M.S. 1947, Iowa State College	Maine Texas
Tanaka, Beth Nancy Tanch, Roland Henry A.B. 1939, University of Wisconsin University	Wis.	Taylor, Dyer Justice LL. B. 1951, The George Washington University	Va.
		Taylor, Elton Lewis Taylor, Frank, Jr. A.B. 1948, Mercer University	D.C. Ga.
		Taylor, Harry Wallace B.S. 1949, University of South Carolina	S.C.
		Taylor, Herbert Bradley B.S. 1948, The George Washington University	Fla.

Taylor, Hubert Trenton	D.C.	Terry, William Merahon	Va.
Taylor, James Robert	Va.	A.B. 1943, University of Delaware	D.C.
A.B. 1951, University of Chicago		Teta, JoAnn	D.C.
Taylor, Joan Goldthwaite	Md.	Teter, Zola Lee	Va.
A.B. 1952, Middlebury College		Tetlow, Frank Louis	Va.
Taylor, John Maxwell	Va.	Tew, Harry James	Md.
A.B. 1952, Williams College		Thach, John Smith, Jr.	
Taylor, John Perry	Va.	Thackara, James Justin	IL
Taylor, June D.	Pa.	A.B. 1936, Harvard University	
Taylor, Marie Gottsch	Va.	Thacker, Robert Preston	D.C.
A.B. in Govt. 1950, The George		B.S. 1941, Bradley University	D.C.
Washington University		Thackston, Rebekah	Pa.
Taylor, Mark Stratford	D.C.	Thada, Grace Augusta	D.C.
Taylor, Mary Jane	Va.	Thaler, William David	D.C.
A.B. 1951, Duke University		Thamakas, Anastassia	Va.
Taylor, Mary Landon	D.C.	Thane, Frederick Lyston	
Taylor, Paul Strother	D.C.	Tharp, Norman Ray	D.C.
Taylor, Robert Leslie	D.C.	B.S. 1942, Ohio State University	D.C.
A.B. 1941, Syracuse University		LL.B. 1950, St. Louis University	Va.
Taylor, Rose Marie	D.C.	Thau, Ida Seefor	Va.
Taylor, Theodore Clark	Md.	Thayer, Jane Hillis	
A.B. 1951, University of Michigan		Thayer, Marjorie Clark	Ky.
Taylor, Thomas Gordon	Ohio	B.S. 1928, University of Oregon	D.C.
A.B. 1952, Ohio Wesleyan University		Theobald, Frederick Henry	D.C.
Taylor, Virginia Ashby	Va.	Theobald, Ursula McEnroy	Unk.
Taylor, Warren Francis	D.C.	Theodoropoulos, Kyriodad Aemeter	
Taylor, Wilbur Asher	Md.	Theurer, Gary Lloyd	
Taylor, William Russell	Md.	B.S. in Econ. 1951, Utah State	D.C.
Tchanouteheff, Raymonde	D.C.	Agricultural College	N.H.
Teagle, Ernest Howard	D.C.	Thibault, Charles Daniel	Iowa
A.B. 1950, The George Washington		Thibodeau, Edgar Joseph	
University		Thiopen, Jeanie LeConte	
Tebo, Carol Ann	Va.	Thodt, Charles A.	N.J.
Teboe, Louis John, Jr.	Iowa	A.B. 1950, State University of Iowa	D.C.
Teeter, Beverley Ellen	Va.	Thomas, Arthur Robert Whyte	N.J.
Teeter, Lawrence William	D.C.	Thomas, Audrey Frances	Va.
Tejeda, Neda	D.C.	Thomas, Benjamin F.	Pa.
Tenenbaum, Milton	D.C.	Thomas, Bertha Osborne	Va.
B.S. 1951, Syracuse University		Thomas, Betty Jane	D.C.
Tennille, Robert Mell, Jr.	Fla.	Thomas, David Duval	Ala.
Tennyson, George Geoffrey	D.C.	Thomas, Dolores Mary	D.C.
A.B. 1951, The George Washington		Thomas, Earl Edward	
University		Thomas, Francis DeLashmutt	Va.
Tennyson, Mark Gilbert	D.C.	A.B. 1953, Dartmouth College	D.C.
Tennyson, Theodore Magnus, Jr.	D.C.	Thomas, Henry Alexander	Iad.
Tenot, Yves Marie	Va.	Thomas, Howard Francis	
Tepper, Milton Leo	Va.	Thomas, James Blake	D.C.
A.B. 1938, A.M. 1939, New York		A.B. 1952, Wabash College	Pa.
University		Thomas, James Louis, Jr.	Va.
Teran, Jose Francisco	D.C.	Thomas, Lee	Va.
Terkoski, Sylvester Adolf	Pa.	Thomas, Luther Minter, Jr.	Wash.
Terrafranca, Caroline Patricia	N.J.	Thomas, Mariwether Braves	
Terrazas, Hector F.	Ariz.	Thomas, Miles Garland	D.C.
B.S. 1950, University of Arizona		A.B. 1951, University of Washington	D.C.
Tessett, Hunter Luzader	Va.	Thomas, Myrtle	
Tessett, Stuart Thornton III	Va.	B.S. 1952, Radford College	
Terrill, Anne Campbell	Md.	Thomas, Nancy	
Texas, Ann	D.C.	A.B. 1952, The George Washington	Va.
Terry, Diane Marcia	N.Y.	University	Chic.
Terry, Edna Catherine	Va.	Thomas, Ned Randolph	D.C.
B.S. 1928, Virginia State Teachers		Thomas, Neil Eugene	D.C.
College, Farmville		Thomas, Paul Richard	D.C.
Terry, George Mulford	Md.	Thomas, Raymond Edward	Md.
A.B. in Govt. 1947, The George		Thomas, Richard Crawford	D.C.
Washington University		Thomas, Robert John	Md.
Terry, Gilmer Roy	Calif.	Thomas, Roy Robert	Va.
Terry, John Edward	D.C.	Thomas, Ruth Lee	D.C.
Terry, Luke Edward	W.Va.	Thomas, Virginia Doris	
B.S. 1918, University of Tennessee		Thomas, William Bates	Md.
M.S. 1940, West Virginia University		A.B. in Govt. 1951, The George	
Terry, Paul Alfred	D.C.	Washington University	
Terry, Spencer Baldwin, Jr.	N.Y.	Thomas, Willis Leroy	

Thompson, Allan Glasgow B.S. in E.E. 1942, Montana State College	Va.	Throckmorton, Walter Jackson	Va.
Thompson, Christopher Steel	D.C.	Throckmorton, William Robert, Sr.	Va.
Thompson, Edwin Strock	Pa.	Thurau, Norman	N.Y.
Thompson, Eleanor R.	D.C.	Thurston, George Albert, Jr.	Va.
Thompson, Emma Louise	D.C.	Thurston, Alice Janet	Md.
B.S. 1941, Wilson Teachers College		A.B. 1917, Denison University	
Thompson, Francis Clark	Va.	A.M. 1928, Northwestern University	Mo.
Thompson, Garland Pennell	D.C.	Tibbatts, Robert Cash	N.J.
Thompson, Harry Francis	Md.	Tienaz, Joan Dorothy	D.C.
A.B. 1950, The George Washington University		Tiches, Louis James	
Thompson, James Morris	Texas	A.B. in Govt. 1952, The George Washington University	Va.
Thompson, John Alexander	Md.	Tiches, Peter Charles	D.C.
Thompson, John Edward	Wash.	Tiebout, Howard Edwin	
Thompson, John Jerome	D.C.	A.B. 1950, The George Washington University	Md.
Thompson, Judith Covington	N.C.	Tidball, James Gorman	Ala.
Thompson, Kenneth Leroy	D.C.	Tidwell, Edgar Norman	D.C.
Thompson, Gordon L.	W.Va.	Tiedemann, John George	Wis.
A.B. 1949, West Virginia University		Tienney, John Lester	
Thompson, Marion Dorrance	D.C.	A.B. 1929, University of Minnesota	
Thompson, Mary Eleanor	D.C.	T.L.B. 1918, University of Wisconsin	N.I.
Thompson, Mary Lorelle	Va.	Tiehe, Donald James	Md.
Thompson, Matthew Charles	Va.	Tiehe, John Francis	N.C.
B.S. 1949, Iowa State College		Tier, M. Virginia	Md.
Thompson, Nellie Zetta	Nebr.	Tien, Frank James, Jr.	Va.
A.B. in Ed. 1941, A.M. in Ed. 1946, The George Washington University		Tienhunko, Natalie Veris	
Thompson, Ralph Franklin	Kans.	A.B. 1952, Queens College	Md.
Thompson, Robert Lee	Pa.	Tinson, Jean Carol	Va.
A.B. 1952, The George Washington University		Tintons, Joseph Edward, Jr.	N.Y.
Thompson, Stephanie Edith	Va.	Tintner, Edwin Sanford	D.C.
Thompson, William Eugene	S.C.	Titcham, Carleton Eugene	Va.
A.B. 1946, University of North Carolina		Tobey, William Granville	D.C.
Thompson, William Blake	Va.	A.B. 1940, Centre College	Ga.
A.B. in Govt. 1947, The George Washington University		Tipton, Clarence Lee	Pa.
Thompson, Myrtle Stuart	D.C.	Tipton, Frank Preston	
Thompson, Robert Lee	Va.	B.S. 1941, University of Georgia	Md.
A.B. in Govt. 1952, The George Washington University		Tittle, George Smith	Md.
Thorne, Robert Marshall	Md.	A.B. 1941, William and Mary College	Mass.
Thorne, Anne Brien	D.C.	Tobman, Rose Eleanor	Kans.
A.B. 1951, San Diego State College	Calif.	Tobow, R. Lloyd Emory, Jr.	D.C.
Thorne, Edward Vernon Cox	N.C.	Tobson, John Thomas	
A.B. 1950, University of North Carolina		Tobson, Ruth Munster	
Thorn, John Wilson III	Md.	Tobey, Patricia Anne	Pa.
Thornhill, Randolph Clay	Va.	A.B. 1951, Western Maryland College	D.C.
Thornston, Mary Hunter	Calif.	Tomas, James Howard	
Thornston, Paul Florence	N.C.	Tomas, Jerome Jerry	Va.
Thorn, Franklin Keenan	Va.	P.S. 1948, Syracuse University	D.C.
A.B. 1950, University of Washington	Wash.	Tobin, Ralph Moysius	D.C.
Thorne, Edward Garnet	D.C.	Toda, Tozoku Ise	D.C.
Thorne, Faye Belle	Ill.	Toda, Keenan Kenneth	Va.
A.B. 1952, University of Maryland	Md.	Todd, Donald Wiley	
Thorton, James Milton	Md.	B.S. 1931, U.S. Naval Academy	Va.
B.Ed. 1940, Illinois State Normal University		Todd, Lincoln Samuel	Hawai
Thorton, Robert Dean	Va.	Todoko, Violet Sumie	
B.S. in C.E. 1929, M.S. in C.E. 1939, University of California		A.B. 1951, Syracuse University	Iowa
Thrall, Irving Russell	Va.	Tolt, Berget	Pa.
A.B. 1952, Wash. College	D.C.	Tomas, Samuel Thomas	Ill.
Thrust, Louise Tillman	Md.	Toler, John H.	Conn.
Thrift, Sterling Reynolds	Md.	A.B. 1942, Beloit College	Colo.
		Tobis, Arthur	
		Toll, David Ross	
		B.S. in E.E. 1946, U.S. Naval Academy	
		Toll, Merle	
		A.B. 1915, Bryn Mawr College	
		Tolliver, Robert James	S.D.
		Tolson, Donald Colvin	Va.
		Tolson, Walter Francis	D.C.
		Tom, Robert Mun Sung	Hawai
		Tomasino, Carmelo Frank	N.Y.

Tombes, Suzette Broadus A.B. 1949, Mary Washington College	Va.	Travaglini, Constance	Va.
Tomes, James Francis B.S. 1949, University of Maryland	Md.	Travis, William Livingston B.S. 1933, U.S. Military Academy	Va.
Tomkins, Leonard George	Va.	Treger, Donald Malcolm	N.J.
Tomlin, Dennis William	Md.	Trembley, Clifford William	D.C.
Tomlinson, Fred Brownell	Va.	Trembley, Helen Louise A.B. 1933, A.M. 1939, The George Washington University	Md.
Tomlinson, J. Richard A.B. 1952, Swarthmore College	Pa.	Trescott, Carolyn	Mo.
Tomlinson, Robert Parrish B.S. 1943, Virginia Polytechnic Institute	Va.	Treumann, Walter A.B. 1946, Washington University A.M. 1948, University of Chicago	Tenn.
LL.B. 1950, University of Richmond	Va.	Trevino, Daniel Kidder B.B.A. 1948, University of Texas	D.C.
Tompkins, James F., Jr. A.B. 1951, American University	Va.	Trezie, Carl Arthur A.B. 1942, University of Michigan	Va.
Tompkins, Valerie W.	Md.	A.M. in Ed. 1951, The George Washington University	D.C.
Tomsko, Robert Ferdinand	Calif.	Trianosky, Bursat Anne J.	Va.
Tong, Marjorie Ellen	D.C.	Trickett, George Waldeck	D.C.
Tons, Egons	Tenn.	Trigg, William Robertson III A.B. 1949, University of Virginia	D.C.
Toomey, John Samuel A.B. 1949, The George Washington University	W.Va.	Trumble, South III B.S. 1948, University of North Carolina	Mo.
Toompas, Charles Arthur A.B. 1958, West Virginia University		Triplett, Mary Elizabeth	Va.
A.M. 1950, The George Washington University		Triplett, William Everett B.S. 1949, Georgetown University	Me.
Topping, Thomas Edwin	D.C.	Tritabaugh, Kenneth Franklin	Va.
Torgersen, Torwald Harold B.S. in A.E. 1951, University of Illinois	Ill.	Trites, Robert Thomas	D.C.
Torre, Philip Joseph	D.C.	Trittspoe, Theresa Golovin	Me.
Touceda, Elena Consuelo	D.C.	Trittspoe, William Jennings	D.C.
Touchette, Robert Henry	Md.	Trivanovitch, Miriam Hapgood	S.D.
Tourin, Jack A.B. 1941, College of the City of New York	Md.	Tromano, Michael Patrick, Jr.	Md.
Tousignant, Leonard Adrien B.S. 1944, U.S. Merchant Marine Academy	Mass.	Trompeter, Joseph Donald	Md.
B.S. 1949, Georgetown University		Tron, Charles Edmund Tron, Robert Augustus, Jr. A.B. in Govt. 1951, The George Washington University	D.C.
Tower, Lee A.B. 1947, B.S. 1949, University of Washington	Wash.	Troshinsky, Charles Hilary	Mass.
Towner, Patricia Ann	Va.	Trott, Raymond Augustine A.B. 1951, Boston College	Maine
Townsend, Dorothy Mae	Va.	True, Joan Brillhart	Va.
Townsend, Thomas Nelson A.B. 1951, Municipal University of Omaha	Nebr.	Truworth, Orson William B.S. 1948, Wilson Teachers College A.M. in Ed. 1949, The George Washington University	Ohio
Townsend, Woodrow Emory Townshend, Harrison Sterling	D.C.	Truhan, Andrew A.B. 1947, University of Michigan	D.C.
Townson, Robert Fenn, Jr. A.B. and A.M. 1952, The George Washington University	Md.	Truitt, Ruth Annette	D.C.
Trail, Mary Margaret	Md.	Trundle, David A.B. 1953, Western Maryland College	N.Y.
Trainor, George Edward, Jr.	D.C.	Trush, Edward Harry A.B. 1949, College of the City of New York	Va.
Tramor, James Herbert	R.I.	LL.B. 1952, Columbia University, Law School	Va.
Traiser, Mabel Oakley A.B. 1952, The George Washington University	D.C.	Trussell, Arthur Lee	Pa.
Trampus, Anthony B.S. 1951, Case Institute of Technology	R.I.	Trussell, Margaret Ann	D.C.
M.S. 1953, The George Washington University	D.C.	Truswell, Frank Fred	D.C.
Trapa, Eberhard Georg B.S. 1946, University of Berlin	Wis.	Truon, Dewey, Jr.	
Trant, Barbara Bennett	Ohio	Truon, Harry John A.B. 1949, University of Southern California	D.C.
Trask, Ruth Helen A.B. 1952, Skidmore College	Md.	Truon, Helen Latitudes	Va.
Tranger, Robert James M.S. 1946, California Institute of Technology	Mass.	Truon, Neofaxton Theodore	
	Conn.	Tsantes, John Frank A.B. 1950, University of North Carolina	D.C.
		Tseng, Maurice Hearnpin A.B. 1952, The George Washington University	Md.
	Va.	Tseng, Shu Chieh B.S. 1944, Ph.D. 1945, University of London	

Tsionides, James Leon	Maine	Tym, Leon	Ill.
Tubridy, Donald Joseph	N.Y.	LL.B. 1941, American University	
Tuck, Harold Adrian	Ohio	Tyre, Thomas Edward	D.C.
B.S. 1950, University of Cincinnati		B.S. 1951, University of Maryland	
Tuck, David Hallam	D.C.	Tyrell, William James	Va.
Tuck, Edward	Mass.	Tyson, Deborah S.	Va.
A.B. 1950, Dartmouth College		A.B. 1941, Hunter College	
Tucker, Charles Manley	D.C.	Tyson, Frances Marion	Va.
Tucker, Clyde Davis	Va.	Tyson, Harriet Arnes	Texas
Tucker, Jacqueline Elizabeth	D.C.	Tyson, Nancy Elizabeth	D.C.
Tucker, Lillian Elizabeth	Va.	Tzaperas, Nicholas Anastasis	D.C.
A.B. 1949, University of Vermont			
Tucker, Nancy Garrison	Va.	U	
Tucker, Norman Elmer	Md.		
Tucker, Phyllis Cagnon	Va.	Udelson, Daniel Gerald	Md.
Tucker, Richard Lee	Va.	Uhl, Anna	D.C.
Tucker, Simon	Va.	Uhl, John Phillip	Va.
B.S.S. 1940, College of the City of		Ujerich, Robert Matthew	Va.
New York		A.B. 1950, Duquesne University	
M.P.A. 1943, New York University		Ulin, Jeremy Coleman	Mass.
Tolte, Lorraine Marion	Minn.	A.B. 1950, Harvard University	
A.B. 1948, St. Olaf's College		Ullman, Jack Donald	D.C.
Legendhaft, Robert Irwin	D.C.	B.S. 1951, University of Illinois	
B.S. 1948, The George Washington		Ullom, Shirley Ann	Va.
University		Ulrich, Harold John	Va.
Tull, Robert Lewis	D.C.	Ulshafer, Clarence Benton	D.C.
A.B. in Govt. 1949, The George		Umb, Dante	D.C.
Washington University		Umfrey, William Walter	D.C.
Tullner, William Wirsing, Jr.	Md.	Underhill, Frances Ann	Mich.
B.S. 1952, Temple University		A.B. 1950, A.M. 1951, University of	
Tully, Eva Frances	Va.	Michigan	
Tumulty, John Francis	Va.	Underhill, Richard Sands	D.C.
Tun, M. Thee	Burma	A.B. 1950, A.M. 1951, University of	
A.B. 1947, B.S. 1950, University of		Michigan	
Rangoon		Underwood, Kathleen Lennon	Va.
Tungate, Carolyn Frances	Minn.	Unger, Jess Paul	Ill.
Turcas, Omar Alvin	Va.	B.S. 1941, U.S. Military Academy	
Turnall, Kenneth Welch	Pa.	M.S. in C.E. 1949, University of	
A.B. 1952, Cornell University		Illinois	
Turman, Edgar Mitter	Del.	Unger, Richard Wayne	Pa.
Turk, Elizabeth Ethel	S.C.	A.B. 1949, The Citadel	
Turk, John Robert Leslie	Pa.	Unkenholz, Willard Clifton	Md.
Turk, Anthony Joseph		B.M.E. 1948, College of the City of	
B.S. 1945, M.S. 1947, Pennsylvania		New York	
State College		Unkrish, Glenn Jerold	D.C.
LL.B. 1952, The George Washington		Untersberger, Owen	N.J.
University		Updike, Ion Edward	D.C.
Turn, Edward Vincent	N.Y.	Uphoff, James Harold	Va.
Turn, R. Joseph Joseph	D.C.	A.B. in Govt. 1953, The George	
Turn, Thomas F.	D.C.	Washington University	
Turn, Elizabeth Ethel	N.J.	Uphoff, Robert Lee	Va.
Turner, Jan Michael	Fla.	Upton, Arvin Edward	Ky.
B.S. 1951, Juillard School of Music		A.B. 1951, Western Kentucky State	
Turner, Bill Eugene	D.C.	Teachers College	
Turner, George Eugene	Va.	LL.B. 1940, Harvard University	
B.S. 1949, Carnegie Institute of		Urban, Edward William	Conn.
Technology		A.B. 1950, Elmhurst College	
Turner, Irving	Va.	Urich, Bryce Walter Henry	N.C.
B.S. 1941, LL.B. 1948, Georgetown		Urich, David Allan	Md.
University		Urman, Henry Herman	D.C.
M.S. 1946, The George Washington		J.D. 1919, University of Vienna,	
University		Austria	
Turner, John Owen	D.C.	M.C.I. 1951, The George Washington	
Turner, Joseph Morton	Oreg.	University	
A.B. 1950, Whitman College		Urso, Joseph Anthony	Conn.
Turner, Mary Carolyn	Ill.	Ushijima, John Takeji	Hawaii
Turner, Richard Crawford	Va.	A.B. 1950, Grinnell College	
B.S. 1948, University of Maine	Maine	Ussery, Donald Clyde	D.C.
Turnipseed, Truman Elliott	Miss.	Ustun, Semih Avdemir	D.C.
Turpin, Frank Gale	Mich.	Uteschulte, John Robert	Md.
A.B. 1951, American University		B.S. 1952, University of Maryland	
Tuttle, Ralph Grolley	Md.	Utey, Buford C.	Tenn.
B.S. 1915, University of Washington		B.S. 1951, Memphis State College	

Utley, Frank Herbert	D.C.	Vann, Clarence Houston	Mich.
Utrecht, Frederick William, Jr.	Md.	B.S. 1947, Wayne University	Ala.
Utt, Wilberta Mae	W.Va.	Vann, David Johnson	
Utterback, Mary Jane	Va.	B.S. 1950, L.L.B. 1951, University of	D.C.
Utteridge, Judith Cecile	D.C.	Alabama	
Uyehara, Geoffrey Umio	Md.	Van Ness, Harper Elliott	
		B.S. 1942, U.S. Naval Academy	
		M.S. 1950, Rensselaer Polytechnic	
		Institute	Mass
V		Vano, Jeanette Loretta	Va.
Vaccarelli, Andrew Joseph	N.Y.	Van Note, Bartlett Monroe, Jr.	Va.
Vacciani, Franco V.	Md.	Van Riewick, Guy Everett	
Vahony, George Vartkes	Va.	A.B. in Govt. 1950, A.M. in Govt. 1951,	
Vail, Benjamin Anthony	Va.	The George Washington University	Md.
A.B. 1940, West Liberty State College		Van Ryn, Russell Vay	D.C.
Vail, Margaret Anna	Calif.	A.B. 1951, University of Michigan	
Vail, Thomas L.C.	Va.	Van Sanford, Gordon Myron	
Vaile, John Richard	D.C.	A.B. in Govt. 1949, The George	
Vaill, Dorothy Louise	Mass.	Washington University	
Vaillancourt, Wilfred Napoleon	N.H.	Van Sant, Mary Caroline	Va.
A.B. 1951, University of		Van Santen, John Henry, Jr.	Ohio
New Hampshire		Van Santen, Lillian Whittenburg	Ill.
Vain, Leilani Patricia	Va.	Van Schaick, Howard Douglas	
Valderrama, Nicasio Gonzalez, Jr.	Philippines	A.B. 1950, Grinnell College	D.C.
Valdes, William Charles	Va.	Van Sicker, Robert Howard	Ind.
A.B. 1940, Yale University		Van Tilburg, Richard Lee	
Valderrin, Hugo Joseph	Pa.	Ph.B. 1946, University of Chicago	Fla.
Valencia, Abelardo, Jr.	Philippines	Van Zandt, Richard Dewitt	Bolivia
B.S. 1952, Georgetown University		Varcolik, Theresa Mary	Conn.
Valencia, Pablo	D.C.	Varda, Frederick Guillermo	
Valencia, Pasqual	Calif.	Vargosko, Andrew John, Jr.	D.C.
A.B. 1951, San Jose State College		B.S. 1951, University of Maryland	
Vaenick, Ralph Felix	Ill.	Vargosko, Audrey Prowell	N.Y.
Valentine, Andrew Jackson	Fla.	A.B. 1951, University of Maryland	Md.
B.S. 1945, U.S. Naval Academy		Varian, Ellen Hanna	
Valentine, Marjorie Parks	Fla.	Varmer, Borge Kvamme	
A.B. 1949, University of Chattanooga		Cand. Juris. 1950, University of	Md.
Valentine, William Brackett	Va.	Copenhagen	
B.S. in F.E. 1952, University of		Varmer, Glenn Kvamme	
Kentucky		Cand. Juris. 1951, University of	Fla.
Valentini, Philip Endicott	D.C.	Copenhagen	Va.
Valk, Henry Snowden	D.C.	Varn, Marjorie Lillian	Va.
Valle, Antonio	N.C.	Varney, Robert Jesse	
Valle, O. Chas Marie		Vary, Willis Leavenworth	
A.B. 1951, Barry College		B.F.E. 1951, The George Washington	Pa.
Vallejo, Rosa Maria	D.C.	University	Va.
Valles, Lillian Lucille	Texas	Vasil, Michael	N.Y.
Van Arsdale, Lyle Junior	Calif.	Vasquez, Frank Rae	
Van Blarcom, Peter Payne	Va.	Vastola, Francis Joseph	Va.
Vance, John Andrew	W.Va.	A.B. 1950, University of Buffalo	Va.
B.S. 1951, Fairmont State College		Vaughan, Joseph Harrison	
Vance, Lucy	W.Va.	Vaughan, Leonard Walton	
Vance, Robert S.	Ala.	A.B. 1940, A.M. 1951, The George	N.J.
B.S. 1940, L.L.B. 1952, University of		Washington University	Mo.
Alabama		Vaughan, Thomas H., Jr.	
Van Creveld, Elisabeth Flora	D.C.	Vaughn, John W.	Va.
Vandercook, Lynn Beattie	D.C.	A.B. 1952, Stanford University	Mo.
Van Graek, Richard	D.C.	Vaught, Francis Warren	Va.
Van Haagen, Carol Henry	Md.	Vaupel, Vessie Edith	Mass.
A.B. 1952, Marjorie College		Vaupel, Warren Frederick	
Van Handenhove, Roger	D.C.	Vaustrian, Charles Edward, Jr.	
Van Herpe, Leo Bryant	Md.	B.S. 1947, U.S. Coast Guard Academy	Puerto Rico
B.S. 1951, American University		Vazquez, Jose Bernardino	Md.
Van Hollen, Cecilia Coane	D.C.	B.S. 1952, Monmouth College	D.C.
Van Horn, Robert Means	Mo.	Veatch, Dolph Martin	
Van Horne, Cornelia Howe	Va.	Vega, Luis	Puerto Rico
Van Koppenhagen, Isabel Pattison Van Syke	Va.	A.B. 1944, University of Puerto Rico	Brazil
	N.J.	Veiga, Joao Carlos Nobre	D.C.
Van Kouteren, Andrew		Velder, Wallace E.	
B.S. 1952, Fairleigh Dickinson		A.B. 1950, University of Maryland	Md.
College		Velgos, Robert	
Van Meter, Jack Philson	D.C.	B.S. 1951, University of Detroit	

Vellone, Joseph A.B. 1938, New Jersey State Teachers College, Upper Montclair	N.J.	Vorobey, Joan Nancy A.B. 1940, The George Washington University	Va
Venezky, David Lester B.S. 1948, The George Washington University	D.C.	Vos, Elizabeth Aughey B.S. 1940, Juniata College	Va
Venz, Annette Adams	D.C.	W	
Verbits, Albert A.B. 1940, Pennsylvania State College	Pa.	Waddell, William W. III	Va
Verplussis, Mary D.	Greece	Wade, Dorothy A	Neb.
Verho, Mary Ann	Va.	Wade, Joseph Edward	Md.
Vernlund, Edna Elizabeth	Minn.	Wade, Margie Pauline	D.C.
Vetnor, Richard Enloe A.B. 1940, University of Oklahoma	Okla.	Wade, Richard Rudolph A.B. 1948, A.M. 1950, The George Washington University	Md.
Verner, Edward Kearny, Jr.	Va.	Wadleigh, John Russell	D.C.
Vespole, Michael James	N.Y.	Wadsworth, James Leo A.B. 1948, Brigham Young University	Nev.
Vest, Cecil Woods, Jr. A.B. 1952, Johns Hopkins University	Md.	Wagner, Evelyn Mae	D.C.
Vest, Stanley Jay	D.C.	Waggoner, Carol Rice	D.C.
Vetter, Rodman Frank A.B. 1941, Dartmouth College	N.I.	Waggoner, The George Washington University	Va.
Vian, Jacqueline Elizabeth	Va.	Waggoner, Russell Eugene	Va.
Vibbard, Warren John A.B. 1940, Hobart College	N.Y.	Waggoner, James William	D.C.
Vick, Billy McGee	D.C.	Wagman, Barlow Jacob	Md.
Vickroy, Robert Kenneth	Ind.	Wagner, Diana Libra	N.J.
Vincenzo, Wilfred Clifford	Pa.	Wagner, George William	Pa.
Vipness, Helen Anne A.B. 1941, The George Washington University	D.C.	Wagner, James Henry	D.C.
Vilchus, Annette Anna	Md.	Wagner, Miriam	Tenn.
Vilchus, Margaret Biruta	Pa.	Wagner, Noah Chester A.B. 1941, Tusculum College	Oreg.
Vince, Arthur I.	Mass.	Wagner, Richard D.	D.C.
Viney, Helen Marie A.B. 1945, University of Massachusetts	Mass.	Wagner, Sarah Elizabeth	D.C.
Vint, John Liner B.S. 1946, Pennsylvania State Teachers College, Millersville	Pa.	Wadala, John Frank	D.C.
Vintner, Stanley Charles A.B. 1940, The George Washington University	Va.	Walby, Ninger Sabi	D.C.
Vintner, James Robert A.B. 1941, The George Washington University	Pa.	Walby, Charles A.B. 1952, The George Washington University	Minn.
Vintner, Paul Kenneth	Pa.	Walch, Grace Theodora A.B. 1944, College of St. Catherine (Mass.)	D.C.
Vintner, Michael P., Jr. B.S. 1946, Pennsylvania State Teachers College, Millersville	D.C.	Walsh, Gerald	Japan
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walsh, John Shigen B.S. 1942, Trinity University	D.C.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walsh, John Frank A.M. 1949, Peabody College for Teachers	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walt, Norman M.B.A. 1948, Harvard University	D.C.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Virginia Lee B.S. 1947, Union College	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Albert Joseph B.S. 1948, U.S. Naval Academy	Ga
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Oliver Picher	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Eric A.B. 1948, A.M. 1951, The George Washington University	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, David Louis	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Mattie Alice	D.C.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, John Fred	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Edward Pilus	D.C.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Arch	D.C.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Doris Anne A.B. 1949, University of North Carolina	Md.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Ernest Carroll	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, George Ely A.B. 1952, University of Virginia	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, Harold Donald	Va
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, John Sheppard Brittain, Jr.	D.C.
Vintner, Mary Philomene A.B. 1947, The George Washington University	D.C.	Walton, John William	D.C.

Walker, Peter Brockway A.B. 1952, Harvard University	D.C.	Walters, Mary Lee A.B. 1950, Glenville State College	W.Va.
Walker, Randal Richard A.B. 1948, University of California M.S. 1951, University of Southern California	Va.	Walton, Beth Walton, Floyd Calvin A.B. 1950, Mount Union College	Okla.
Walker, Raymond Francis Walker, Robert Williams B.S. 1950, U.S. Naval Academy	D.C.	Walton, James Richard Walton, Lorraine Washington	D.C.
Walker, William David A.B. 1950, Cornell University	Okla.	Waltz, Helen Kathryn A.B. 1947, Gettysburg College	D.C.
Wall, Betty Kyle Wall, Conrad Grey Wall, Donald Dean Wall, Samuel B.S. 1950, Whitworth College	D.C.	Walworth, Kathleen Ann A.B. 1952, The George Washington University	N.Y.
Wall, Stanley James Wallace, Bradley Nelson Wallace, Donald Marion Wallace, Ernestine Bruner B.S. 1948, Alabama State Teachers College, Troy	Md.	Walynes, Eugenia N. A.B. 1937, Hunter College	Fa.
Wallace, George Cadwallader A.B. 1951, University of Pittsburgh	Md.	Walz, Deirdre Drew Wandel, Fred Charles B.S. 1935, M.S. 1938, College of the City of New York	N.Y.
Wallace, Gertrude Hugginbottom Wallace, John Berry B.S. 1948, Georgetown University	Calif.	Wansor, Richard C. Warburton, Donald Leroy B.S. 1951, University of Redlands	Pa.
Wallace, John George B.S. 1941, U.S. Naval Academy M.S. 1946, University of California at Los Angeles	Mass.	Ward, Anne Radcliffe B.S. 1951, University of Maryland	Md.
Wallace, Marjorie Gould A.B. 1951, Bryn Mawr College	Va.	Ward, Dallas Sunderland Ward, Dalton Clarence Ward, Henry Beecher Ward, Jack Lee Ward, John Wesley B.S. 1950, The George Washington University	Calif.
Wallace, Mary Elizabeth A.B. 1952, Mary Washington College	Ala.	Wardell, Richard Norman B.S. 1952, Illinois Institute of Technology	Pa.
Wallen, Andy Howard Wallen, John Edgar, Jr. Wallen, Lloyd Arthur Wallen, Margaret Roberta A.B. 1952, Connecticut College	D.C.	Warder, Frederick Burdett, Jr. Ware, Frances Lee A.B. 1940, University of Louisville	Okla.
Wallen, Susan Ann Walling, Kathleen Mayton Wallis, Rodman William Wallrodt, George Raymond Wannat, Asward Jerome A.B. 1952, The George Washington University	Fla.	Ware, Robert Stephens Wareham, Edward Alexander III Warfield, Joseph Christian, Jr. LL.B. 1948, University of Maryland	Pa.
Walsh, Stanley Walsh, Elizabeth Lucille Walsh, Mackenzie A.B. 1944, Yale University M.D. 1948, Columbia University	D.C.	Warfield, Richard Myers A.B. 1948, The George Washington University	Pa.
Walsh, Charlotte Marie B.S. 1941, University of Chicago	N.C.	Warfield, Robert Welmore B.S. 1950, University of Virginia	D.C.
Walsh, Eleanor Florence Walsh, John William Walsh, William Barton A.B. 1948, University of Virginia A.M. 1950, Harvard University	Pa.	Waring, Joanne Parker A.B. 1950, Westhampton College, University of Richmond	D.C.
Walsh, Charles William B.E.E. 1951, Catholic University of America	D.C.	Warneck, Joseph Warner, Barbara Joan B.S. 1952, Juniata College	Md.
Walsh, Edith Elizabeth A.B. 1944, Randolph-Macon College	N.C.	Warner, Charles Willard A.B. 1948, William and Mary College	D.C.
Walsh, Elmer Herman Walsh, Harold John B.S. 1940, Springfield College	D.C.	Warner, John William B.S. 1949, Washington and Lee University	D.C.
Walsh, Raymond Ward, Jr. Walsh, Winton Parker Walters, Frank John Walters, Ivan Tracy Walters, Jane Louise	D.C.	Warner, Leah Gary Warner, Mary Moore A.B. 1944, Westhampton College, University of Richmond	Md.
	N.J.	Warner, Patricia Ann Gray Warner, William Claflin A.B. 1949, The George Washington University	Okla.
	Va.	Warnock, Charles Webster A.B. 1951, Berea College	Va.
	Mo.	Warnock, Julian Marion B.S. in M.E. 1949, Duke University	Pa.
	D.C.	Warren, Leon Hugh Warren, Marguerite Elizabeth	D.C.
	Md.		
	Pa.		

Warren, Mary Perry A.B. 1934, Augustana College	D.C.	Way, James Leong A.B. 1947, University of California	Calif.
Warren, Royer G. A.B. 1967, University of California at Los Angeles	Va.	Weakley, William Vanner Weasmer, Charles Brent A.B. 1951, A.M. 1952, The George Washington University	Va. D.C.
Warren, Ruth Ticknor Warren, Virginia Caroline Wasnick, Louis Frederick Wasner, Elizabeth Rouse Wash, Charles Edward	Va. Pa. Md. Md. Va.	Weatherhead, Milton Nye Weathers, Milledge Wright A.B. in Govt. 1949, The George Washington University	Va. Ga.
Washburn, Albert Brooks, Jr. A.B. 1970, Dartmouth College	Vt.	Weathers, Robert Burns B.E. 1941, Northern Illinois State Teachers College	D.C.
Wasieleski, Regina R. Wasiewicz, Norman Philip Wasser, Frances Rothberg A.B. in Ed. 1947, The George Washington University	D.C. Pa. D.C.	Weaver, David Paul A.B. 1948, Washington College	Md.
Waszink, Robert Arthur Watson, Robert Vernon A.B. 1952, The George Washington University	N.Y. Calif.	Weaver, Glenn Eileen Weaver, Helen Marie A.B. 1952, American University	D.C. D.C.
Watkins, Grace Waterman, Guy Van Vorst Waterous, Jean Benton A.B. 1949, Mount Holyoke College A.M. 1948, Southern Methodist University	Ill. D.C. Md.	Weaver, Nell Weaver, William Carroll A.B. 1926, West Virginia University	W.Va.
Waters, Edward Paul A.B. 1952, University of Vermont Waters, Joe Edward B.S. 1950, Georgetown University	Conn. Ky.	Weaver, William Clark Weaver, William Milton Webb, Anne Snyder A.B. 1948, Shepherd College	Md. Pa. W.Va.
Waters, John Augustine Waters, Joyce Elmore Watkins, Gail Eugene A.B. 1949, Fairmont College Watkins, Harold Stanley B.S. 1949, University of Kansas	Va. Va. W.Va. Md. Va.	Webb, Edwin Yates Webb, John Wesley Webb, Lois Neuhans Webb, Robert Arthur Webb, William Kay A.B. 1952, Bob Jones University	Md. Va. Utah D.C.
Watkins, Lincoln Arthur B.S. 1951, University of Maryland Watkins, Roger Royal B.S. 1950, Pennsylvania State College	Md.	Webber, Frederick Nelson, Jr. Weber, Arnold Isadore Ph.D. 1940, Macquette University A.M. 1950, Harvard University	Md. D.C.
Watson, Agnes Ruelle Watson, Beulah Elizabeth A.B. in Govt. 1950, The George Washington University	W.Va. Md.	Weber, Paul B.S. 1947, The George Washington University	Va.
Watson, Blanche Lewis Watson, David James, Jr. A.B. 1949, M.B.A. 1941, University of Michigan	Tex.	Webster, Clark Gibbons Webster, John Clyde Webster, Robert Oswald P.M.F. 1947, Ohio State University	Md. Ind. Wash.
Watson, Evan William Watson, Gerald LeRoy Watson, Jack Wilbur A.B. 1948, State University of Iowa	Ind. Mich.	Weddle, Robert Lowman Wedel, Cynthia Clark A.B. 1920, A.M. 1930, Northwestern University	Va. D.C.
Watson, James Philmore Watson, Leo Carl Watson, Luelotte Bunge S.J.D. 1933, University of Bonn, Germany	Tex.	Wedel, Reford James A.B. 1940, Berea College Wedemore, Lulu Mae A.B. 1948, The George Washington University	Kans.
Watson, Robert Carlyle Watson, Robert M. Culloch B.S. 1944, New York University Watson, Robert Taylor Watson, Warren Kenneth B.B.A. 1948, Michigan State Normal College	Md. Md. Texas Mich.	Wedler, Arthur I. Weber, Ruth Elizabeth Weber, Marlene Ruth Wedder, Frances Delan I. B.S. in E.E. 1948, University of Pennsylvania	Md. Va. D.C. Md.
Watts, Aubrey Dwight Watwood, Lynn Marion, Jr. Waxman, Morris Way, Alice Elmore	D.C. N.Y. Pa.	Weeks, Gladys Evelyn B.S. 1948, The George Washington University Weeks, James Hubbard B.S. 1942, University of Massachusetts Weese, Bernard M. Kenzie B.S. 1952, The George Washington University Weinreb, Chester George Weinreb, George Gustav B.S. 1956, Virginia Polytechnic Institute Weidmeyer, William Aubert Weinand, Robert Joseph Weise, Dean Vernon	D.C. Mass. Md. D.C. Md.

Weil, Gerard Gordon B.S. 1948, Washington and Jefferson College	N.Y.	Wellington, Peretz A.B. in Govt. 1950, The George Washington University	Pa.
Weinberg, Donald Hope A.B. 1951, Pennsylvania State College	D.C.	Wells, Annette Murray Wells, Elaine O.	D.C.
Weinberg, Doris Lee	N.Y.	Wells, Ellwood Cecil	Ohio
Weinberg, Dorothe Rigby	Md.	Wells, Gordon Clifford	Md.
Weinberg, Raymond Morton	Md.	Wells, Joseph Clinton	D.C.
Weinberger, Fanny	Md.	Wells, Rebecca Roe	Ky.
Weiner, Jacob Murray	N.Y.	Wells, Robert Oscar, Jr. A.B. 1952, The George Washington University	Mich.
Weingarten, Heiman A.B. in Govt. 1952, The George Washington University	N.J.	Wellso, Charles George B.S. 1949, University of Wisconsin	Wa.
Weinglass, Leonard Irving	Wis.	Wellwood, Robert Edward A.B. 1950, Columbia University	N.J.
Weinkauf, Russell Erwin B.S. 1946, L.L.B. 1951, University of Wisconsin	D.C.	Welsh, James A.	Pa.
Weinmann, Camilla Marvin	Md.	Welsh, John A.	D.C.
Weinreb, Neil Michael	Ohio	Welsh, John Molyneux	Va.
Weinreich, Lee Wallace	D.C.	Welsh, Mary Kathleen	W.Va.
Weinstein, Allen Jack	D.C.	Welshans, Fred Gardner A.B. 1937, Shepherd College A.M. in Ed. 1951, The George Washington University	Va.
Weinstein, Samuel	D.C.	Welte, Cecil Rice B.S. 1938, U.S. Naval Academy	Va.
Weinstein, Shelle Levin A.B. 1951, Indiana University	D.C.	Wenger, Rene Lawrence B.S. 1921, A.M. 1940, University of Virginia	D.C.
Weintraub, Leo	N.C.	Wentland, Alfred	Va.
Weintraub, Leo Martin	D.C.	Wentz, Lois Mae	D.C.
Weisberg, Tanya Elaine	D.C.	Wentz, Yvonne Lorraine	
Weisblatt, Irving A.B. 1952, The George Washington University	Md.	Weshow, Farrell Roy B.S. 1951, The George Washington University	D.C.
Weisbrod, Fred Edgar	Md.	Werdig, Robert Martin, Jr.	N.J.
Weise, Allen Gardner B.S. 1948, The George Washington University	N.Y.	Werner, Alice Crane	Md.
Weisl, Reyna Lander	D.C.	Werner, George Henry B.M.E. 1940, The George Washington University	D.C.
Weiss, Aileen Renee	D.C.	Werntz, Carl Weber	D.C.
Weiss, David Keefer	Md.	Werthenbruch, Mary Claire	Md.
Weiss, Harvey Charles	Md.	Werth, Michael Wolf B.S. 1948, Illinois Institute of Technology	Ohio
Weiss, Herbert B.S. 1949, College of the City of New York	N.Y.	Wertz, Alice Dianne A.B. 1951, Radcliffe College	Ohio
Weiss, Louis A.B. 1951, Brooklyn College	Md.	Wertz, Charles Robert B.S. 1952, Ohio State University	Ind.
Weiss, Roslyn Jackenthal A.B. 1946, Hunter College	D.C.	Wesemann, Jeannette L.	Va.
Weiss, Rowena B.Ch.E. 1940, Catholic University of America	N.Y.	Wesley, Carl, Jr.	D.C.
Weiss, Sherwin Elihu A.B. 1950, Brooklyn College	Calif.	Wesley, Mary Ann	Md.
Weiss, Verle Elaine A.B. 1950, Stanford University	Va.	Wessels, August Herman, Jr.	Va.
Weissenstein, Clarence Hays B.S. in Ch. E. 1950, Carnegie Institute of Technology	D.C.	West, Clifford Harry, Jr. A.B. 1941, University of Maine	England
Weissmann, Max Ludwig B.S. 1952, The George Washington University	D.C.	West, Donald Joseph	Va.
Weitz, George A.B. 1952, New York University	Md.	West, Elaine Aldona A.B. 1951, Mary Washington College, University of Virginia	D.C.
Weitzer, David	D.C.	West, Ernest Paul	N.Y.
Weitzman, Mary Cohen	N.Y.	West, Genevieve Lillian	Va.
Weitzner, Jay Kenneth	Md.	West, Jean Haywood A.B. 1949, Virginia Polytechnic Institute	D.C.
Welch, George, Jr.	D.C.	West, Mary Ellen A.B. 1947, University of Iowa	Va.
Welch, James Anthony	D.C.	West, Norman Ariel A.B. 1949, University of Richmond	Va.
Welch, Michael Crawley	Tenn.	West, Stanley Duane B.S. 1950, Indiana University	Va.
Welch, Richard Noel B.S. 1949, Memphis State College	Va.	West, William Donald B.S. 1949, Georgetown University	
Welch, Robert Eugene	D.C.		
Wellington, Benjamin A.B. in Govt. 1950, The George Washington University			

Westbrook, Richard Bowker	D.C.	White, John Bridges	D.C.
Westbrook, William Hughes	Pa.	A.B. 1946, Harvard University	Va.
A.B. in Ed. 1952, The George Washington University		White, Marvin Ross	
Westcott, Raymond Arthur	Va.	B.S. 1948, Millsaps College	D.C.
Wester, Robert Melvin	N.C.	White, Robert Bellarmine	Mass.
Weslake, William Arthur	Va.	White, Robert Francis	
B.S. in Eng. 1947, Princeton University		B.S. 1951, Northwestern University	Pa.
Weston, Miriam Louise	Va.	White, Robert McKay	
A.B. 1948, Stanford University		B.S. 1950, Albright College	Va.
Weston, Priscilla Jean	D.C.	White, Robert Milton	Ill.
Westra, Joyce Ann	Va.	White, Suzanne	N.C.
Wetherbee, Fairland Henry	Md.	White, Ware Wolfe	Ga.
Wetherill, Lynn	N.H.	White, Wilma Jean	
B.S. 1949, University of the South		B.C.S. 1951, University of Georgia	Wis.
Wetherill, Margaret Clark	D.C.	White Eagle, Mary Agnes	Va.
Wetmore, Nathan	D.C.	Whitely, Audrey Beatrice	D.C.
A.B. 1951, Brooklyn College		Whitener, Thomas Grady	D.C.
Wetzel, Daniel David	D.C.	Whitfield, Daniel Newton	Va.
Wetzel, Hilda	D.C.	Whitescarver, Kenneth Tyree, Jr.	
A.B. 1916, New York University		A.B. 1943, Hardin-Simmons University	D.C.
Weyburn, Robert Oliver, Jr.	Miss.	Whitesides, Nettie Jane	Md.
B.S. 1942, Mississippi State College		Whitfield, Willis James	Wis.
Whalan, Mary Patricia	R.I.	A.B. 1952, Hardin-Simmons University	Md.
Whale, Arthur Richard	Va.	Whitford, Geraldine Lucille	Fla.
B.S. 1915, Northwestern University		Whitford, William Ellis	
Whaley, Mary Virginia	W.Va.	Whiting, Dinty	
A.B. in Ed. 1949, The George Washington University		B.S. 1950, Georgetown University	D.C.
Wharton, Peggy Ann	Va.	Whitis, Claude Elwyn	N.C.
Wharton, Katherine Dennin	Va.	Whitley, Daniel P.	
Wheat, Robert W.	D.C.	A.B. 1918, LL.B. 1941, University of North Carolina	N.J.
A.B. 1948, Southeast Missouri State College		Whitlock, Charles Barton	D.C.
M.S. 1951, University of New Mexico		Whitlock, Elmer William, Jr.	N.C.
Whaley, Richard Neal	Va.	Whitman, Charles Edward	Nev.
Whaler, John Byron, Jr.	Va.	Whitmore, Daniel Norman	Md.
Whaler, Marcia Parker	Va.	Whitmore, Eric Chestone	
Whaler, Mary Starr	Va.	A.B. 1949, Mary Washington College	Va.
A.B. 1946, Wesley College	Conn.	Whitmore, Mary Ursula	
L.B. 1949, The George Washington University		B.S. 1948, Massachusetts State Teachers College, Salem	D.C.
Whelan, Thomas Ellis	Md.	Whitney, Courtney, Jr.	
B.S. 1949, Mount St. Mary's College		A.B. 1949, Yale University	N.Y.
Whelan, John Hartley	D.C.	Whitney, George Wood	
Whelan, Kenneth Ervin	Ind.	B.T.E. 1949, Reusselaer Polytechnic Institute	Va.
Whelan, Charles Henry	Conn.	Whitney, Grady Edward	Mich.
A.B. 1951, Brown University		A.B. 1949, Emory University	
Whelan, Martin Edward, Jr.	Calif.	Whitney, Joseph R. Wood	
A.B. 1949, University of Santa Clara		B.S. 1948, University of Minnesota	
L.B. 1951, Loyola University of Los Angeles		A.B. in Govt. 1949, The George Washington University	D.C.
Whetzel, Elizabeth Vaden	Md.	Whitney, Mary F. Fish	D.C.
Whetzel, Anna Marie	Va.	Whitton, Natalie W.	
A.B. 1949, Shenandoah College	Va.	B.S. 1949, Boston University	D.C.
White, Alfred Lawson	Md.	Whitton, Scott Cameron	
White, Charles Adams	Va.	A.B. 1949, University of Nevada	
White, E. Jane Bethel	Va.	L.L.B. 1952, Harvard University	Va.
White, Edwin Basden, Jr.	Va.	Whitton, Virginia Marie	Md.
A.B. 1944, Emory University	Fla.	White, Gordon Alfred	
White, Ernest Leroy		A.B. in Govt. 1949, The George Washington University	Va.
White, Foster Lee	Md.	Whitman, Hazel Lunge	
B.S. 1940, Oklahoma University	La.	A.B. 1949, South College	
M.S. 1949, Tulane University		A.M. 1912, University of South Dakota	Md.
White, Frances Lanier	W.Va.	Whitaker, John Louis	D.C.
White, George Echarit	N.H.	Whitaker, Frank Harvey	
A.B. 1950, The George Washington University	Va.	A.B. 1952, Lafayette College	Va.
White, Hubert Earl	D.C.	Whitcomb, Dorinda Berry	Md.
		Whitcomb, Helen Viesing	
		A.B. 1939, Columbia University	Ind.
		Whitcomb, Lester W.	Wyo.
		Whittington, Mary Louise	

Whittington, Otto Wiseman B.S. in P.A. 1951, University of Arkansas	D.C.	Williams, Bruce Harold B.S. 1934, Southwest Texas State Teachers College	Texas
Whittle, Ransom Alben	Va.	M.S. 1938, University of Texas	Miss
Whitworth, Donald Phillip	D.C.	Williams, Carol Marie	D.C.
Wichert, Howard Charles	Va.	A.B. 1952, University of Minnesota	Va.
Wicks, Henry Lorrall	Va.	Williams, Charles Haddon	Id
A.B. 1948, Hamline University		Williams, Clara Jane	
Wickline, Harry F.	Md.	Williams, Earl, Jr.	
Widmayer, Clara Louise	Md.	B.S. 1951, The George Washington University	Md.
Wiebenson, Carla Ann	Calif.	Williams, Edward Allan	Va.
A.B. 1952, University of Colorado		Williams, Eileen Honor	Mass
Wielkiewicz, Rose Marie	Pa.	Williams, Eleazer Andrews	D.C.
Wienecke, Edward Rudolph	D.C.	A.B. 1949, Princeton University	A-I
L.L.B. 1950, University of Florida		Williams, Elma	Wash
Wiener, Janet Josephine	D.C.	Williams, Flora Rhea	Va.
Wiener, Rosa Dahl	D.C.	Williams, Gerald Lester	Fla
Wiers, Mason Harlan		Williams, Harold Colene	Texas
A.B. 1950, Evansville College		Williams, Harold Tyson	
Wiggins, Guy Arthur	Calif.	Williams, Henry Barton	
A.B. 1950, University of California at Los Angeles		B.S. 1941, U.S. Naval Academy, L.L.B. 1952, Vanderbilt University	Ala
A.M. 1951, Harvard University	Va.	Williams, Irene	
Wight, Arianna Randolph	Maine	A.B. 1925, Alabama College	Pa.
Wight, Nelson Grady	Maine	A.M. 1928, Peabody College	N.C.
Wight, Ola Hills	Mo.	Williams, Jay Wheldon	D.C.
Wichtman, Gene Francis	D.C.	Williams, Jeanette Kelly	
Wigren, Lloyd Ethan	Mass.	Williams, Jessie Lutetia	Texas
A.B. 1949, Columbia University		A.B. 1926, Southwestern College	Md.
Wilansky, Donald Mark	Mo.	A.M. 1953, Columbia University	
Wilborn, Dorothy Mae	Md.	Williams, John Frank	Va.
Wilbur, Glenmore A.		Williams, John Mann	Pa.
A.B. 1928, University of Washington	D.C.	A.B. 1951, Western Maryland College	Md.
Wilcox, Carolyn Sylvia		Williams, John Oscar, Jr.	Va.
A.B. 1941, Rockford College	D.C.	Williams, Kathryn Anne	Texas
Wilcox, Robert Lynn, Jr.	N.Y.	Williams, Lillian Catherine	
Wilkes, Leo		Williams, Lucille H.	D.C.
B.M.E. 1949, College of the City of New York	Md.	Williams, Marie Raymond	N.D.
Willey, Myrna Ellen	D.C.	B.S. 1940, University of Tennessee	
Wilhelm, Harry Wesley		Williams, Morrison Patton	Texas
B.S. 1952, The George Washington University	Md.	Williams, Neal Earl, Jr.	D.C.
Wilhoit, Judith Hale	Va.	B.S. 1949, U.S. Coast Guard Academy	Pa.
Wilke, Marvin Eugene	Va.	Williams, Neal, Jr.	D.C.
Wilkinson, Katherine		Williams, Paula Marylyn	
B.S. 1943, Radford Teachers College	Va.	Williams, Phyllis Jean	
Wilkes, Charles Latimer	Md.	Williams, Polly Teed	Va.
A.B. 1950, Dartmouth College		B.S. 1948, The George Washington University	
Wilkes, James Claiborne, Jr.	D.C.	Williams, Rayburn Albert	Pa.
A.B. 1950, Dartmouth College		B.S. 1940, Lynchburg College	D.C.
Wilkes, John Daniel	Wash.	Williams, Richard Edward	
Wilkinson, Joseph Wythe	Texas	Williams, Richard Gates	D.C.
B.S. 1947, Carnegie Institute of Technology		R.S. 1917, U.S. Military Academy	N.C.
Wilkinson, Lloyd Joseph	R.I.	M.S. 1950, University of Illinois	Md.
Wilkinson, Mary Margaret	Va.	Williams, Robert Edwin	
Wilkinson, Richard Sterling	Va.	Williams, Stacy Leon	W.Va.
A.B. 1949, The George Washington University		Williams, William Sterne	D.C.
Wilkinson, William Earl	D.C.	A.B. 1915, University of Utah	Va.
Willard, Hugh Warren	Ill.	Williamson, O'Dell Clinton	Va.
Willard, William Creighton	D.C.	Willier, Lillian Esther	
Willcox, Ralph Emerson	Va.	Willingham, Alton Russell	Va.
Willey, Ann Elizabeth	Va.	Willingham, Harris E., Jr.	
Willey, Barbara Lorraine	N.H.	B.S. in B.A. 1950, University of Richmond	Va.
Willing, James Breault	Va.	Willis, Edward Allen, Jr.	D.C.
Williams, Barbara Joyce	Iowa	Willis, Helen Jeanne Zeller	D.C.
Williams, Bonnie Lee	Va.	Willis, James Henry	Va.
B.S. 1953, Virginia Polytechnic Institute		Willis, Robert Edward	Fla.
		Willoughby, Nancy Sue	N.Y.
		Willis, Patricia Anne	
		Wilman, Shraga	

Wilson, Benjamin James A.B. 1943, M.S. 1947, West Virginia University	Md.	Wink, Linus John	Md.
Wilson, Bettie Jean		Winkler, Ann Madeline	Va.
Wilson, Carl W. A.B. 1952, University of Texas	D.C.	Winnings, Lora Janette	W Va.
Wilson, Charles Howard	Texas	Winstup, Lou Ellen	D.C.
Wilson, Dale Branch	Va.	Winstow, Joanne Patricia	Va.
Wilson, Diane Coninne	D.C.	Winstow, Vaughan Bradford	D.C.
Wilson, Edward Jay, Jr.	Va.	Winter, Wilma Judd	N.Y.
Wilson, Elizabeth Cecil A.B. 1934, Wellesley College	Ky.	Wirt, Robert Malcolm	Va.
Ed. M. 1947, Harvard University		Wirt, Elmer Raymond	Va.
Wilson, Ella M.	N.Y.	Wirth, Peter Conrad	Calif.
Wilson, Francis Tomb, Jr. A.B. 1942, Yale University	Ill.	Wishner, Betty	Md.
Wilson, Frank Wesley	Va.	Wissinger, Betty	Ohio
Wilson, George Robert, Jr.	Va.	Wise, Austin Lee Puy	Va.
Wilson, Grace West	Va.	Wise, John Phillip	Texas
Wilson, Grace Glossner	Md.	Wiseman, Mabel Walker	D.C.
Wilson, Harold Douglas	Va.	Wisland, Roy Henry	Pa.
Wilson, Henry Charles	N.Y.	Wisher, Helen Ann	D.C.
Wilson, Howard	D.C.	Wissner, Carl Edward, Jr.	Va.
Wilson, Howard Eugene	D.C.	Wissner, Joan Kay	D.C.
Wilson, Jack	Va.	Witcomb, Stanton William	D.C.
LL.B. 1946, University of Tennessee	Tenn.	B.S. 1949, University of Maryland	
Wilson, Jack Herbert		Wolam, Robert Carey	D.C.
A.B. 1950, University of Oklahoma	Okla.	A.B. in B.A. 1950, The George Washington University	
Wilson, James Frederick	D.C.	Witherspoon, Nancy Sue	N.C.
A.B. 1952, The George Washington University		A.B. 1947, University of North Carolina	
Wilson, Janice Navoo	W Va.	Witkin, Lloyd Benjamin	D.C.
Wilson, John Francis	D.C.	B.S. 1949, Louisiana Polytechnic Institute	
Wilson, John Vernon	S.C.	M.S. 1951, The George Washington University	
B.S. 1954, U.S. Naval Academy		Witkin, Rita Ann	D.C.
M.S. 1948, University of California at Los Angeles		Witowski, Walter Phillip	Md.
Wilson, Josephine Coleman	Va.	Wittman, George Eugene	N.I.
Wilson, Leo Lee	D.C.	Wittek, George	Wis.
B.S. in E.E. 1948, Carnegie Institute of Technology		Wobbesing, Sondra Lee	Va.
Wilson, Margaret Alice	Pa.	Wodinsky, Isadore	Md.
Wilson, Marian Sue	Va.	A.B. 1939, Brooklyn College	
Wilson, Marie Anne	Md.	M.S. 1941, The George Washington University	
Wilson, Raymond Boyd	Neb.	Wohl, Paul	N.Y.
Wilson, Rena Tabar	Kans.	Woolke, John Oliver	Va.
Wilson, Rita Elizabeth	Calif.	B.S. in M.E. 1947, The George Washington University	
Wilson, Ruth Cook	Va.	Worick, Irene Celestine	D.C.
A.B. 1920, Syracuse University		Worrows, Jan. Jr.	N.J.
Wilson, Thomas Rayne	Kans.	Wolf, Barbara Cohen	D.C.
A.B. 1949, University of Kansas		Wolf, Emanuel	N.Y.
Wilson, Thomas Edwin	Ill.	A.B. 1950, A.M. 1952, Syracuse University	
Wilson, Walter Arthur Neil	Md.	Wolf, Frank George	Md.
Wilson, Edward James II	N.I.	Wolf, Gustave William	N.J.
Wilson, Robert Harlan	N.Y.	Wolf, Richard Marvin	D.C.
A.B. 1945, A.M. 1952, Syracuse University		Wolf, Ronald Wenger	Pa.
Winbush, Hickman Howard	Texas	A.B. 1934, Lebanon Valley College	
Winbush, Janis Myrth	D.C.	Wolf, Rose Nickumma	N.Y.
Winbush, Jewel	D.C.	Wolf, William	D.C.
A.B. 1941, Northwest State College of Law		Wolf, Zee Leopold	D.C.
Winbush, Julia Adelaide	D.C.	B.S. 1949, Northwestern University	
Winbush, Louis Edwin	N.J.	Wolfe, Barton Harold	D.C.
Winbush, Finar	Va.	Wolfe, Eugene Noel	W Va.
A.B. 1949, North Dakota State Teachers College		A.B. 1950, The George Washington University	
Winbush, Warren Hutchison	Fla.	Wolfe, Grace Hastings	Va.
A.B. 1950, William and Mary College		Wolfe, Howard James	Md.
Winbush, Gilda Joyce	D.C.	Wolfe, Mary Lee	W Va.
Winbush, Arthur Melvin	Va.	B.S. in Ed. 1947, A.M. 1949, West Virginia University	

Wolfe, Robert Archer	D.C.	Woolford, John M.	Ma.
B.S. 1952, Notre Dame University		Ch.E. 1930, University of Cincinnati	
Wolkamp, William, Jr.	N.J.	B.S. in Ed. 1934, A.M. 1942, Miami	N.J.
Wolin, Barbara Elaine	D.C.	University	
Wolkeau, Jacob Alfred	D.C.	Woolson, Irwin P.	D.C.
A.B. 1943, University of Pennsylvania		B.S. 1952, Rutgers University	D.C.
Wollman, Ronald Frank	D.C.	Woolger, Rosanna Grace	R.I.
Wolman, Harold	N.Y.	Woolley, Diane St. Omer	Neb.
B.S. 1942, College of the City of		Woolley, Ruth Conant	
New York		Work, George Arthur	
Wolozin, Robert	Mass.	B. Mus. 1950, Eastman School of	Ma.
Womack, Herman Lynn	D.C.	Music	
A.B. 1949, The George Washington		Workinger, George Samuel	
University		A.B. 1951, The George Washington	D.C.
Womble, William Lansden	Fla.	University	D.C.
B.S. 1951, Duke University		Worley, Alice Elaine	Ma.
Wommack, Lloyd LaVerne	Md.	Worley, Barbara Anne	
Wommack, Virginia Cyrilus	Md.	Worlev, Joseph Francis	
Wong, Eugene	D.C.	Wortman, David Morris	
Wong, Huin Ping	D.C.	A.B. 1948, LL.B. 1951, The George	N.J.
Wong, James K.	Calif.	Washington University	Ma.
Wong, Walley	Calif.	Wray, Karen Joy	
Wong, Wu-tsuang	Singapore	Wray, William Neal	
Wood, Alice Stanton	D.C.	B.S. in E.E. 1952, University of	Il.
A.B. 1951, Adelphi College		Maryland	
Wood, Charles Bryan	D.C.	Wren, Donald Duncan	Pa.
B.S. 1951, American University		A.B. 1951, Westminster College	
Wood, Donald Ira	Texas	Wren, Edgar Alban	Va.
Wood, George Hollins	Va.	LL.B. 1948, Georgetown University	
Wood, Harry Eugene	S.C.	Wright, Burton	Tenn.
LL.B. 1952, The George Washington		B.S. 1947, M.S. 1949, University of	
University		Washington	
Wood, Hubert Dean	D.C.	Wright, Dale Alan	
Wood, James Buchanan	D.C.	B.S. 1948, Carnegie Institute of	
Wood, James Henry, Jr.	Va.	Technology	
Wood, Julia Burton	D.C.	LL.B. 1952, The George Washington	La.
A.B. in Ed. 1952, The George		University	
Washington University		Wright, Dalton Houston	
Wood, Margaret Evers	Mass.	B.S. 1940, Louisiana College	D.C.
Wood, Mary Martha	Md.	A.M. in Govt. 1948, The George	Va.
Wood, Patricia Lee	D.C.	Washington University	
B.S. 1951, Wilson Teachers College		Wright, Doris Carolyn	
Wood, Robert Ambrose	Va.	Wright, Elizabeth Truman	D.C.
A.B. 1948, The George Washington		A.B. 1950, Allegheny College	Wa.
University		Wright, Flor Alma	
Wood, Sheridan Winthrop	Vt.	Wright, Howard John	
Wood, Thomas Bennett	Texas	B.S. in M.E. 1951, University of	Va.
Wood, Walter Henderson	Texas	Wright, John Grant	
Wood, William Arthur	D.C.	B.A. 1940, Southern Methodist	Il.
B.S. 1940, Manhattan College		University	
Wood, William Jennings	Md.	Wright, Katherine Louise	Mass.
Wood, William Ronald	Md.	A.B. 1946, DePauw University	
Woodall, Thomas Woodrow	Va.	Wright, Kenneth Lyle	Pa.
B.S. 1945, Wake Forest College		B.S. 1946, Rhode Island University	
Woodard, Joseph Harold	Md.	M.S. 1949, Purdue University	
Woodard, Richard Mead	Va.	Wright, Leonard Townsend	Pa.
Woodard, Woodrow Wilson	Va.	B.S. 1945, M.B.A. 1940, Syracuse	
B.M.E. 1946, North Carolina State		University	
College		Wright, Loretta Shepherd	Maine
Woods, Laverne	Mo.	A.B. 1947, University of Pennsylvania	Mo.
Woodside, Byron Crosby	Va.	Wright, Peter	
Woodson, Joseph Bernd	D.C.	Wright, Ralph G., Jr.	D.C.
B.S. 1944, Swarthmore College		B.S. in C. 1946, St. Louis University	Fla.
Woodward, Carl Virginia	Ga.	Wright, Thomas Francis	Calif.
Woodv. Ronald Harlan, Jr.	Va.	Wright, William Dallas, Jr.	Ind.
Woolfer, Ethel Mava	Va.	B.S. in I.E. 1940, University of Miami	
Woodridge, Arthur Owen	Va.	Wrynski, Donald James	
Wolf, Alan Rector	D.C.	Wulf, James Theodore	
Wolf, Bert Harold Reginald	D.C.	Wulf, Pearl Elizabeth	
Wolf, Evelyn Rebecca	D.C.	B.S. in H.E. 1952, The George	
		Washington University	

Wyatt, John Walton B.S.E. 1938, Alabama State Teachers College, Troy LL.B. 1947, University of Florida LL.M. 1950, The George Washington University	Fla.	Yeager, Philip Brand A.B. 1939, University of Arizona	Va.
Wyatt, Thomas Frederick	D.C.	Yednock, Esther Mary	D.C.
Wydo, John William	Ohio	Yednock, John Joseph	D.C.
Wyeater, Robert Lee	D.C.	B.S. 1952, The George Washington University	
Wyeater, James Monroe	Mont.	Yee, Ernest Gog Sing	Ohio
A.B. 1951, Montana State University		Yeide, Harry Elwood, Jr.	D.C.
Wylie, Jane Marilyn	Hawaii	Yedell, Fanny Fay	Texas
Wylie, John Worthington	D.C.	A.B. 1942, University of Texas	
Wynan, Charles Luman	Wis.	Yen, Helen Chiang-Ying	D.C.
Wynan, Charles Malcolm	Mass.	MLS. 1950, Ohio State University	
Wynan, Willard Gordon	Md.	Yeomans, Alice Virginia	D.C.
Wynore, Max Lee	Kans.	B.S. 1946, New Jersey State Teachers College	
B.S. in Ch.E. 1947, University of Kansas		M.Ed. 1949, Duke University	
Wynn, Patricia Anne		Yim, William Henry	Hawaii
Wynn, Read William	Md.	A.B. 1949, University of Hawaii	
A.B. 1947, University of Georgia	S.C.	Yodanis, Cecil Marie	W.Va.
Wyvil, Mildred Ellen	D.C.	Yohm, Vivian Marie	D.C.
X		B.S. 1944, The George Washington University	
Xenos, Marcia Roessing	D.C.	Yoder, Paul Timothy	Md.
Xenos, Mary Jane	D.C.	Yok, Edgar Dwayne	Md.
A.B. 1948, Indiana State Teachers College		Yok, Elmer Conrad	Va.
Y		Yok, Jack	Ill.
Yadon, Elias Perfecto		Yok, Robert Lamar	D.C.
A.B. 1949, University of Hawaii	Hawaii	Yoshida, Ayumi	D.C.
Yaff, Roger Shalom	Md.	Yoshida, Pauline A.	D.C.
Yager, David Eugene	Va.	Yost, Leona Lee	D.C.
A.B. in Govt. 1952, The George Washington University		Yost, William Adams	
Yager, Elizabeth Ann	Ky.	A.B. in Govt. 1951, The George Washington University	
Yager, Paul William	Va.	Yost, Alan L.	D.C.
Yager, Sam, Jr.	Ohio	B.S. 1950, Oregon State College	
A.B. 1954, Miami University		Yost, Amy Taber	Md.
Yalton, Ruth	D.C.	A.B. 1928, A.M. 1927, University of California	
Yalon, Irvin David	D.C.	Yoster, Charles Edward	Pa.
Yang, Chuan-cheng	D.C.	Yost, David	D.C.
A.B. 1945, Northwestern Associated University, China	D.C.	B.M.E. 1942, Cooper Union	
A.M. 1948, University of Michigan		Yost, Edward MacConnell	Va.
Yang, James M.	Minn.	A.B. 1941, University of Pittsburgh	
B.S. 1951, St. Mary's College		Young, Eugene Vincent, Jr.	D.C.
Yanagida, Anthony	Va.	Young, Francis Washland	Ala.
Yanagita, Gilbert Herbert	N.Y.	B.S. in M.E. 1950, University of Alabama	
A.B. 1954, College of The City of New York		Young, Geoffrey	Texas
Yanovich, Elizabeth Sloan	Va.	Young, George Wesley, Jr.	Md.
Yapere, Benjamin Soong	Wash.	Young, George Yuen	D.C.
B.S. in E.E. 1947, University of Washington		Young, Ida Marie	D.C.
Yarbrough, Irma Juanita	La.	A.B. 1949, The George Washington University	
A.B. 1950, Louisiana Polytechnic Institute		Young, Irene Bennett	Va.
Yaslanpanah, Kambis		A.B. 1948, William and Mary College	Maine
Yates, F. Lear, Jr.	Iran	Young, John Thomas	
Yates, Harvey Atwill	Texas	A.B. 1938, University of Maine	
A.B. 1952, Randolph-Macon College	D.C.	Young, Katherine Hudson	Va.
Yates, Virginia Henderson	Md.	Young, Lloyd Verne	Calif.
A.B. 1930, Georgia State College	S.C.	B.S. 1941, U.S. Naval Academy	
A.B. in L.S. 1938, Emory University		Young, Marguerite Louise	Md.
Yates, William Avery, Jr.	Va.	A.B. 1942, A.M. 1943, University of Wisconsin	
Yazgi, Irene Elizabeth	D.C.	Young, Marilyn June	Ohio
Yazgi, Alberta Suleman	D.C.	A.B. 1950, Ohio State University	
		Young, Mary Catherine	Okla.
		Young, Regina Marie	Ohio
		B.S. 1929, Ohio State University	
		A.M. in Govt. 1945, The George Washington University	
		Young, Ronald Wayne	Md.
		Young, Vernon Cole	Utah

Young, Virginia Gwathmey
A.B. 1947, The George Washington University
Young, William Karl, Jr.
Young, William Lowell
A.B. 1949, Bridgewater College
Young, William Mitchell
Youngblood, Edward Wilmont
A.B. 1950, The George Washington University
Youngs, Joseph Patrick, Jr.
A.B. 1947, University of Miami
Yunker, Laura
Yount, Isabelle Henkel
B.S. 1949, Wilson Teachers College
Yu, David, Jr.
Yu, I-Yuen
A.B. 1942, National Wuhara University, China
Yuhas, Olga
Yurie, Stephanie C.
Yurrow, John Jesse
Yurrow, Victor Roy

Z

Zabilsky, Mae Lucretia
Zadeikis, Mirga Zita
Zaemes, Theodore
Zahareas, Anthony Nicholas
Zahardt, Helen Martha
Zakutian, Aram
A.B. 1952, The George Washington University
Zamanakos, Arthur Stergion
A.B. 1950, Boston University
Zamansky, Eleanor Belle
Zander, Frederick George
Zarate, Louia
B.S. 1950, Santa Clara University
Zaremba, Edmund Anthony
B.S. 1950, Wilkes College
Zatoff, Lawrence Irving
Zauber, Elsie Marguerite
Zborezny, Dorothy Marceline
Zeh, Billy Reid
Zeidman, Benjamin
B.S. 1952, College of the City of New York
Zeidner, Philip Max
Zeitlinter, Robert Carl
Zelko, Daniel Milan
B.S. 1952, University of Pittsburgh
Zemer, Edna Grace
Zeno, Luis A.
A.B. 1945, University of Puerto Rico
Zerman, Florence Walker
Zessoth, Lee Belden
Zereth, Mortimer Morris
Zervakos, Straty
Zett, James
A.B. 1948, Middlebury College
LL.B. 1943, Syracuse University

Va. Ziamandaris, John James
Zickert, Lloyd Lynn
B.S. in M.E. 1950, Purdue University
Va. Zidik, Elizabeth Jane
Md. Ziegler, Herman Joseph
A.B. in Govt. 1951, The George Washington University
D.C. Ziegler, Levern Landis
D.C. Ziehl, Rolland Charles
Zigmond, Faye
D.C. A.B. 1952, The George Washington University
Md. Zikria, Bashir Ahmad
D.C. Zimmerman, Carl Vance
Zimmerman, Harry Chalfant
A.B. in Govt. 1951, The George Washington University
D.C. Zimmerman, Sister M. Mathias
D.C. Zink, Robert Lee
N.J. Zinser, Celia Rae
Md. Zito, Dominic J.
D.C. A.B. 1952, American University
Zittrauer, Nelson Fenley, Jr.
D.C. Zoarski, Howard Francis
B.S. 1950, University of Maryland
Zoch, Richmond Tucker
D.C. A.B. 1931, A.M. 1933, The George Washington University
D.C. Zolyak, John
Ohio A.B. 1953, The George Washington University
S.D. Zombanskis, Mimos Andrew
R.I. Zondag, Cornelius Henry
A.B. 1938, University of Leyden, the Netherlands
Va. A.M. 1949, New York University
D.C. Zook, Dott Earl, Jr.
Md. B.S. 1941, U.S. Naval Academy
D.C. Zubeck, John Thomas
A.B. 1951, The George Washington University
Pa. Zubov, Peter
D.C. B.S. in Ed. 1949, Pennsylvania State Teachers College, Shippensburg
Minn. Zudin, Aleksai Aleksandrovich
Pa. Zundel, Carl Sherman
Va. Zuebe, Jules
N.Y. Zucker, Eugene Mayer
A.B. 1949, Wesleyan University
N.Y. M.P.A. 1952, New York University
Mo. Zuzel, Mary Jean
Pa. A.B. 1951, The George Washington University
D.C. Zuk, William George
B.S. 1951, North Central College
D.C. Zimmer, Anthony Simon
B.S. in M.E. 1950, Purdue University
D.C. Zurawski, Lucia Ruth
D.C. Zurlo, Joenette Marie
Md. Zwennes, Cornelis

D.C.

Va.

D.C.

N.J.

Va.

W.Va.

D.C.

D.C.

Va.

Va.

D.C.

Ga.

Iowa

Ky.

Md.

Conn.

Md.

Pa.

D.C.

D.C.

D.C.

Calif.

Pa.

Pa.

Pa.

Pa.

D.C.

Pa.

D.C.

Va.

Md.

Ill.

Ill.

N.Y.

D.C.

D.C.

SUMMARY OF REGISTRATION

1952-53

THE JUNIOR COLLEGE

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Freshmen	471	354	825
Sophomores	641	523	1,164
	<hr/> 1,112	<hr/> 877	<hr/> 1,989

COLUMBIAN COLLEGE

Juniors	154	140	294
Seniors	296	225	521
Candidates for the degree of Master of Arts	273	151	424
Candidates for the degree of Master of Science	133	19	152
Unclassified	12	4	16
	<hr/> 868	<hr/> 539	<hr/> 1,407

THE GRADUATE COUNCIL

Candidates for the degree of Doctor of Philosophy...	132	29	161
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THE SCHOOL OF MEDICINE

First Year	90	4	94
Second Year	83	1	84
Third Year	76	1	77
Fourth Year	86	4	90
	<hr/> 335	<hr/> 10	<hr/> 345

THE LAW SCHOOL

First Year	378	9	387
Second Year	257	9	266
Third Year	221	5	226
Candidates for the degree of Master of Laws	67	2	69
Candidates for the degree of Master of Comparative Law	13	1	14
Candidates for the degree of Master of Comparative Law (American Practice)	10	0	10
Candidates for the degree of Doctor of Juridical Science	8	0	8
Unclassified	39	2	41
	<hr/> 993	<hr/> 28	<hr/> 1,021

THE SCHOOL OF ENGINEERING

Freshman	181		181
Sophomores	149		149
Juniors	138	1	139
Seniors	137	1	138
	<hr/> 605	<hr/> 2	<hr/> 607

THE SCHOOL OF PHARMACY

Juniors	16	5	21
Seniors	22	0	22
	<u>38</u>	<u>5</u>	<u>43</u>

THE SCHOOL OF EDUCATION

Juniors	11	26	37
Seniors	39	76	115
Candidates for the degree of Master of Arts in Education	137	144	281
Candidates for the degree of Doctor of Education....	59	30	89
Unclassified	8	9	17
	<u>251</u>	<u>285</u>	<u>536</u>

THE SCHOOL OF GOVERNMENT

Juniors	117	29	146
Seniors	240	41	281
Candidates for the degree of Master of Arts in Government	295	49	344
Candidates of the degree of Master of Business Administration	10	0	10
Candidates for the degree of Doctor of Business Administration	5	0	5
Unclassified	8	0	8
	<u>675</u>	<u>119</u>	<u>794</u>

THE DIVISION OF UNIVERSITY STUDENTS

University Students	2,154	1,518	3,672
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THE DIVISION OF SPECIAL STUDENTS

Special Students	807	255	1,062
College of General Studies (Campus Division)	13	1	14

SUMMARY

Students Registered, Academic Year 1952-53	10,266	4,354	14,620
Students Registered, Summer Sessions 1952	2,500	1,123	3,623
	<u>12,815</u>	<u>5,477</u>	<u>18,292</u>
Total Registration 1952-53	12,815	1,810	6,005
Duplicate Registrations	4,805	3,667	11,632
Total Number Students Registered 1952-53	<u>7,970</u>		

TEACHING STAFF 1952-53

Professors Emeritus		10
Professors		05
Adjunct Professors		13
Professorial Lecturers		48
Clinical Professors		21
Adjunct Clinical Professors		4

Summary of Registration

575

Associate Professors	51
Associate Clinical Professors	7
Associates in the School of Medicine	76
Assistant Professors	49
Assistant Clinical Professors	43
Lecturers	113
Instructors	28
Clinical Instructors	148
Research Associates	4
Associates	42
Fellows	41
Technical Assistants	12
Total	811

DEGREES CONFERRED

Associate in Arts (College of General Studies) ..	1
Associate in Arts (Junior College)	400
Bachelor of Arts (Columbian College)	251
Bachelor of Arts (College of General Studies) ..	3
Bachelor of Arts in Education	32
Bachelor of Arts in Government	193
Bachelor of Civil Engineering	12
Bachelor of Electrical Engineering	32
Bachelor of Laws	219
Bachelor of Mechanical Engineering	16
Bachelor of Science	48
Bachelor of Science in Engineering	9
Bachelor of Science in Home Economics	13
Bachelor of Science in Pharmacy	23
Bachelor of Science in Physical Education	13
Doctor of Education	3
Doctor of Laws (Honorary)	1
Doctor of Medicine	92
Doctor of Philosophy	20
Juris Doctor	30
Master of Arts	58
Master of Arts in Education	78
Master of Arts in Government	24
Master of Arts in Personnel Administration	11
Master of Arts in Public Administration	13
Master of Business Administration	35
Master of Comparative Law	5
Master of Comparative Law (American Practice) ..	3
Master of Laws	35
Master of Science	45
	1,760

GEOGRAPHICAL DISTRIBUTION OF STUDENTS UNITED STATES, TERRITORIES, AND POSSESSIONS

Alabama	62	California	196
Arizona	19	Colorado	33
Arkansas	28	Connecticut	97

Delaware	16	North Carolina	112
District of Columbia	3,897	North Dakota	10
Florida	146	Ohio	104
Georgia	57	Oklahoma	49
Idaho	18	Oregon	28
Illinois	178	Pennsylvania	541
Indiana	84	Rhode Island	45
Iowa	83	South Carolina	39
Kansas	45	South Dakota	21
Kentucky	50	Tennessee	65
Louisiana	20	Texas	114
Maine	34	Utah	31
Maryland	1,503	Vermont	18
Massachusetts	184	Virginia	2,105
Michigan	91	Washington	30
Minnesota	70	West Virginia	161
Mississippi	36	Wisconsin	64
Missouri	83	Wyoming	9
Montana	17	Alaska	1
Nebraska	33	Canal Zone	1
Nevada	10	Guam	2
New Hampshire	33	Hawaii	50
New Jersey	191	Okinawa	1
New Mexico	7	Puerto Rico	10
New York	463		

FOREIGN COUNTRIES

Afghanistan	2	Indonesia	1
Argentina	1	Iran	4
Austria	1	Israel	3
Bolivia	1	Italy	4
Brazil	5	Japan	5
Burma	2	Korea	1
Canada	6	Leeward Islands	1
China	6	Malaya	3
Columbia	3	Mexico	1
Costa Rica	3	Nicaragua	1
Cuba	8	Norway	1
Denmark	2	Pakistan	1
Dominican Republic	2	Panama	12
England	3	Philippines	1
Finland	2	Singapore	1
France	6	South Africa	3
Germany	5	Sweden	3
Greece	6	Switzerland	5
Guatemala	3	Thailand	5
Honduras	2	Venezuela	1
India	5	Yugoslavia	

ALUMNI AND ALLIED ASSOCIATIONS

THE GENERAL ALUMNI ASSOCIATION

The objects of this Association are to unite the graduates in closer sympathy and to promote the general welfare of the University. The following persons are eligible for *active* membership: graduates of any college, school, or division of the University; holders of honorary degrees from the University; and members of the Board of Trustees and of the Faculty of the University. Any person who has matriculated, who has been in regular attendance for one year, and who has left the University in good standing, is eligible for *associate* membership.

The Alumni Office is situated at 2018 I Street, Washington, D. C. Alumni are urged to keep the office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

1953-54

President.—Stanley James Tracy, LL.B. 1925; Federal Bureau of Investigation, Washington, D. C.

Vice Presidents:

Columbian College.—James Robert Kirkland, A.B. 1927, LL.B. 1928, LL.M. 1929 (B.C.S. 1931, Benjamin Franklin University); 1519 Underwood Street, Washington, D. C.

Graduate Council.—Orville Edward May, A.B. 1924, M.S. 1926, Ph.D. 1929; 3449 Peachtree Road N.E., Atlanta, Ga.

School of Medicine.—John Hugh Lyons, M.D. 1918, B.S. 1919 (M.S. 1923, University of Minnesota); 1150 Connecticut Avenue, Washington, D. C.

Law School.—Horace Luther Lohnes, LL.B. 1924, LL.M. 1925 (M.P.S. 1927, American University); Munsey Building, Washington, D. C.

School of Engineering.—Merwyn Newell McKnight, Sr., B.S. in M.E. 1938, B.E.E. 1941; 1704 Calvert Street, Arlington, Va.

School of Pharmacy.—David Lander Maxwell, Phar.D. 1913; 8804 Ridge Road, Bethesda, Md.

School of Education.—Elsie Green, A.B. 1914, A.M. 1928; 3151 Tennyson Street, Washington, D. C.

School of Government.—Otto Schoenfelder, A.B. in Govt. 1933, LL.B. 1942; Tax Court of the United States, Washington, D. C.

Treasurer.—Anna Marie Bischoff, A.B. 1928; 2025 I Street, Washington, D. C.

Executive Secretary.—Mary Dow, A.B. 1953; 4734 N. 20th Street, Arlington, Va.

THE GEORGE WASHINGTON UNIVERSITY MEDICAL SOCIETY

The George Washington University Medical Society, the organization of graduates of the School of Medicine, was established in 1905 and since 1926 has been affiliated with the General Alumni Association. The objects of the Society, as stated in the constitution, are "The promotion of the science and art of medicine and the welfare of the School of Medicine."

1953-54

President.—Luther Henry Snyder, M.D. 1935 (A.B. 1931, Gettysburg College); 915 19th Street, Washington, D. C.

President Elect.—Leland Ernest Stevenson, M.D. 1934; 1219 16th Street, Washington, D. C.

First Vice President.—Robert Rice Montgomery, M.D. 1945 (A.B. 1945, Lafayette College); 8314 Carey Lane, Silver Spring, Md.

Second Vice President.—Naomi Marilyn Kanof, A.B. 1931, M.D. 1934; 1150 Connecticut Avenue, Washington, D. C.

Secretary-Treasurer.—Richard Henry Fischer, B.S. 1939, M.D. 1943; 915 19th Street, Washington, D. C.

Council:

James Irving Boyd, A.B. 1923, M.D. 1926, M.S. 1927; 8200 Marlboro Pike, Forrestville, Md.

Herbert Stelwyn Gates, M.D. 1923; 815 East Capitol Street, Washington, D. C.

Herman Solomon Hoffman, A.B. 1921, M.D. 1924; 3118 16th Street, Washington, D. C.

John Hugh Lyons, M.D. 1918, B.S. 1919 (M.S. 1923, University of Minnesota); 1150 Connecticut Avenue, Washington, D. C.

Henry John Russell McNitt, B.S. in Med., M.D. 1925; 1835 I Street, Washington, D. C.

THE GEORGE WASHINGTON LAW ASSOCIATION

The George Washington Law Association, the organization of graduates of the Law School, was founded in 1912 and has been affiliated with the General Alumni Association since 1926. Its purposes as stated in the constitution are to promote high standards of legal education, to keep the alumni of the Law School in closer touch with one another and especially with members of their own classes, to gather and publish at intervals information as to the whereabouts and activities of these alumni, and to further the interests of the Law School.

1953-54

President.—Vernon Romney, LL.B. 1922; 212-214 Kearns Building, Salt Lake City, Utah

- First Vice President.*—Weston Vernon, Jr., LL.B. 1929 (B.S. 1925, Utah State Agricultural College); 15 Broad Street, New York 5, N.Y.
- Second Vice President.*—John Elmer McClure, LL.B. 1924, LL.M. 1925; Washington Building, Washington, D. C.
- Third Vice President.*—Joseph D. Hughes, LL.B. 1934 (B.S. 1930, Alabama Polytechnic Institute, LL.M. 1935 Georgetown University); 525 William Penn Place, Pittsburgh, Pa.
- Secretary-Treasurer.*—Elizabeth Strachan Freret, LL.B. 1950 (B.B.A. 1942, Tulane University); World Center Building, Washington, D. C.
- Executive Committee:*
- Charles Oscar Berry, LL.B. 1932, A.B. 1933; 1100 H Street, Washington, D. C.
- W. Cameron Burton, LL.B. 1921; Investment Building, Washington, D. C.
- Samuel Craighead Caldwell, LL.B. 1943; Wyatt Building, Washington, D. C.
- Justin Lincoln Edgerton, A.B. 1929, LL.B. 1931; Washington Building, Washington, D. C.
- Howard Cecil Kilpatrick, LL.B. 1922; American Security Building, Washington, D. C.
- Horace Luther Lohnes, LL.B. 1924, LL.M. 1925 (M.P.S. 1927, American University); Munsey Building, Washington, D. C.
- Philbrick McCoy, LL.B. 1922, LL.M. 1923; The Superior Court, Los Angeles 12, Calif.
- Charles Sylvanus Rhyne, LL.B. 1937; 730 Jackson Place, Washington, D. C.
- Edward Lipphardt Scheufler, A.B. 1922, LL.B. 1924; 1503 Commerce Building, Kansas City, Mo.

THE LIBRARY SCIENCE ALUMNI ASSOCIATION

The Library Science Alumni Association was organized in 1932 by graduates of the Division of Library Science and became an affiliate of the General Alumni Association in 1935. It was established to foster a closer relationship between the Faculty and graduates and to further the interests of the Division of Library Science and of the University as a whole.

1953-54

- President.*—John S. Moats, A.B. in L.S. 1932 (B.S. in Chem. Eng. 1928, Washington University); 7109 Harwick Road, Washington, D. C.
- Vice President.*—Effe Thompson, ex. 1931; 4104 Arkansas Avenue, Washington, D. C.

Secretary.—Clara Widger, ex. 1928; 2115 F Street, Washington, D. C.
Treasurer.—Mary Philomena Smith, A.B. in L.S. 1933, A.M. in L.S. 1939; 2039 New Hampshire Avenue, Washington, D. C.

THE ENGINEER ALUMNI ASSOCIATION

The Engineer Alumni Association was organized in 1936 and has been affiliated with the General Alumni Association since that time. Its objects are to unite the graduates and Faculty of the School of Engineering in closer fellowship, to promote the general welfare of the School of Engineering and of the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.

1953-54

President.—George Alexander Kilpatrick, B.C.E. 1945; 2100 N. Quantico Street, Arlington, Va.

Vice President.—Reuben Francis Leatherwood, B.C.E. 1933; 105 Gratton Street, Chevy Chase, Md.

Recording Secretary-Treasurer.—James Alexander Sinsabaugh, B.M.E. 1949; 2709 S. Adams Street, Arlington, Va.

Corresponding Secretary.—J. Harold Link, B.S. in E.E. 1940; 2500 K Street, Washington, D. C.

Executive Committee:

Benjamin Carpenter Cruickshanks, Sr., B.S. in M.E. 1920; 5733 4th Street, Washington, D. C.

Merwyn Newell McKnight, B.S. in M.E. 1938, B.E.E. 1941; 1704 N. Calvert Street, Arlington, Va.

George Chester Thom, B.S. in E.E. 1932, B.S. in M.E. 1934; 6320 32d Street, Washington, D. C.

THE GEORGE WASHINGTON UNIVERSITY NURSES ASSOCIATION

The George Washington University Nurses Association was organized in 1914. In 1936 this organization was made an integral part of the General Alumni Association, and graduates of the School of Nursing were accorded associate membership. The objects of the Association are to hold in unison the graduates of the George Washington University Hospital School for Nurses, to care for its sick members, and to promote the advance of nursing in the interest of the George Washington University Hospital.

1953-54

President.—Mrs. Juanita P. Love, N. Dip. 1928; 516 Oakwood Street, Washington, D. C.

Vice President.—Laura Sandres, N. Dip. 1924; 1731 New Hampshire Avenue, Washington, D. C.
Secretary.—Flora Schroebl, N. Dip. 1929; 4730 16th Road N., Arlington, Va.
Treasurer.—Alma W. Stevens, N. Dip. 1928; 4106 Madison Street, Hyattsville, Md.

REGIONAL ALUMNI CLUBS

Regional alumni clubs sponsored by the General Alumni Association are maintained in the following places: Los Angeles, Calif.; Denver, Colo.; Atlanta, Ga.; Chicago, Ill.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; Kansas City, Mo.; St. Louis, Mo.; Brooklyn, N. Y.; New York City, N. Y.; Cleveland, Ohio; Tulsa, Okla.; Portland, Oreg.; Pittsburgh, Pa.; Norfolk, Va.; Seattle, Wash.; Milwaukee, Wis.; Arkansas; Northern California; New Jersey; Ohio River Valley; Utah; Hawaii; Philippine Islands; Puerto Rico.

Information about the officers and activities of these clubs may be obtained from the Alumni Office of the University

THE GRADUATE ENDOWMENT FUND

The Graduate Endowment Fund was founded by the class of 1926 with the object of providing endowment to be used for the development of the University. Membership is limited to seniors and graduates who sign a pledge of \$100, payable annually in ten equal installments.

The pledge notes and funds are held in trust. When the principal reaches the sum of \$100,000, the Board of Administrators of the Fund may pay to the University such sums as it may vote for erection of buildings, acquisition of sites, maintenance, and purchase of equipment. At no time may money be drawn so as to leave a balance of less than \$50,000 on deposit.

On request, the Alumni Office of the University will furnish pledge blanks to alumni.

THE COLUMBIAN WOMEN

The objects of this organization are (1) the promotion of acquaintanceship among its members; (2) the advancement of women by the founding of scholarships in the various departments of the University; and (3) the promotion of the interests of the University.

MEMBERSHIP

The following persons shall be eligible for active membership: (a) any woman who for one year has been a regularly registered student

in The George Washington University, provided that she shall have received credit for thirty hours of work; (b) any woman member of the Faculties or Board of Trustees; any woman on the administrative staff; the wife of any member of the Faculties, Board of Trustees, or of the administrative staff; (c) any woman recipient of an honorary degree from the University.

1953-54

President.—Elsie Green, A.B. 1914, A.M. 1928; 3151 Tennyson Street Washington, D. C.

First Vice President.—Agnes C. Peitz, A.B. in Ed. 1940; Hine Junior High School, Washington, D. C.

Second Vice President.—Mrs. Erma M. Chase, A.B. 1933, A.M. 1936; 4449 Volta Place, Washington, D. C.

Treasurer and Corresponding Secretary.—Josephine Stambaugh; 200 Great Falls Street, Falls Church, Va.

Recording Secretary.—Edith Elizabeth Harper, A.B. in Ed. 1950; 65 M Street, Washington, D. C.

Historian.—Margaret Metzgeroth, A.B. 1921; 119 12th Street, S.E., Washington, D. C.

THE WOMEN'S BOARD OF THE GEORGE WASHINGTON UNIVERSITY HOSPITAL

The object of this organization is to aid in every way the interests and advancement of the George Washington University Hospital. Meetings are held on the first Wednesday of each month, October to June, inclusive. Inquiries regarding membership should be addressed to the Corresponding Secretary, The George Washington University, Washington 6, D. C.

1953-54

President.—Mrs. Cloyd Heck Marvin

Vice President.—Mrs. Wilbur Carr

Vice President.—Mrs. Gilbert Grosvenor

Vice President.—Miss Grace Burton

Recording Secretary.—Mrs. Charles Naeser

Corresponding Secretary.—Mrs. Rufus Roll

Assistant Corresponding Secretary.—Mrs. William McKelway

Treasurer.—Mrs. William Dandridge Terrell, Jr.

Assistant Treasurer.—Mrs. Barton W. Richwine

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THE SCHOOL OF MEDICINE

1953-54

THE
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WASHINGTON
UNIVERSITY
BULLETIN

VOL. LI

No. 6

THE SCHOOL OF MEDICINE

WASHINGTON, D. C.

PUBLISHED IN SEPTEMBER
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BY THE UNIVERSITY

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CALENDAR OF THE SCHOOL OF MEDICINE

1953-54

Date	Day	Occasion
1953:		
Sept. 15	Tuesday	Reexaminations
Sept. 17 and 18...	Thursday and Friday...	Registration period for the academic year 1953-54
Sept. 21	Monday	Academic year begins
Nov. 11	Wednesday	Fall Convocation. Holiday
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Dec. 21-Jan. 2 ...	Monday through Saturday	Christmas recess
1954:		
Jan. 4	Monday	Classes resume
Jan. 23	Saturday	Last day of classes for the Fall Term
Jan. 25-30	Monday through Saturday	Fall Term examination period
Feb. 1	Monday	Classes resume for the Spring Term
Feb. 22	Monday	Winter Convocation. Holiday
Apr. 16 and 17 ...	Friday and Saturday ...	Easter recess
May 22	Saturday	Last day of classes for the Spring Term
May 24-June 1 ...	Monday through Tuesday	Spring Term examination period
June 6	Sunday	Baccalaureate Sermon
June 9	Wednesday	Commencement

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Margaret Mary Hartnett, *Secretary, Department of Surgery*

Virginia Sutton Ringness, *Secretary, Department of Obstetrics and Gynecology*

Louree Crossfield, A.B., *Secretary, Office of the Dean*

Patricia Anne Tobey, A.B., *Secretary, Office of the Dean*

Anne Prendergast Gibbs, *Secretary, Department of Medicine*

PART-TIME ADMINISTRATIVE ASSISTANTS

Gertrude Sheva, A.B., *Bacteriology, Hygiene, and Preventive Medicine*;
Margaret Pogue, B.S., *Biochemistry*; Marilyn Louise Leese, *Pathology*;
Barbara Jean Antel, A.B., *Pharmacology*

THE SCHOOL OF MEDICINE

THE FACULTY

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Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Dean of the School of Medicine*
Thomas Martin Peery, A.B., M.D., *Director of Postgraduate Instruction*

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry*
Walter Freeman, Ph.D., M.D., *Professor of Neurology*
Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*
Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*
Roger Morrison Choisser, B.S., M.D., *Professor of Pathology*
Leland Wilbur Parr, Ph.D., *Professor of Bacteriology*
Winifred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry*
Frederick A. Reuter, M.D., *Professor of Urology*
Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology*
Daniel Bruce Moffett, A.B., M.D., *Professor of Otolaryngology*
Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics*
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Thomas McPherson Brown, A.B., M.D., *Professor of Medicine*
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Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology*
Thomas Martin Peery, A.B., M.D., *Professor of Pathology*
William Woodrow Stanbro, M.D., *Professor of Radiology*
Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation*
Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
Charles Seymour Coakley, M.D., *Professor of Anesthesiology*
Claude Matthews MacFall, LL.B., Ph.D., *Professor of Anatomy*
Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*
Radiford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*
Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*
Daniel LeRay Borden, A.M., M.D., *Clinical Professor of Surgery*
Roscoe Willis Hall, Ph.B., M.D., *Clinical Professor of Psychiatry*
William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*

William Herndon Jenkins, M.D., *Clinical Professor of Otolaryngology*
 *Paul Calabrisi, A.M., *Associate Professor of Anatomy*
 Victor Frederick Ludewig, A.B., B.S., *Superintendent of the University Hospital*

COMMITTEES ‡

THE DEAN'S COUNCIL

Joseph Hiram Roe
 Brian Blades

Winfred Overholser
 John Parks

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OUTPATIENT DEPARTMENT

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 Thomas McPherson Brown

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 Brian Blades
 Victor Frederick Ludewig

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Angus MacIvor Griffin

John Parks, *Chairman*
 Charles Seymour Coakley

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Thomas McPherson Brown

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 Thomas McPherson Brown
 Calvin Trexler Klopp

* On sabbatical leave 1952-53.

‡ The President of the University and the Dean of the School of Medicine are members of
 office of all committees.

COMMITTEE ON SCHOLARSHIP

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Claude Matthews McFall

COMMITTEE ON INTERN AND RESIDENT TRAINING

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Thomas Martin Peery

COMMITTEE ON HOSPITAL PRIVILEGES

John Parks Thomas McPherson Brown, *Chairman*
Brian Blades

ADVISORY COMMITTEE ON POSTGRADUATE INSTRUCTION

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Preston Alexander McLendon Winfred Overholser
Brian Blades John Parks
Thomas McPherson Brown
Clayton Bernard Ethridge

GENERAL INFORMATION

INTRODUCTORY

The School of Medicine of The George Washington University was opened in March 1825; of the medical schools now in existence in the United States, it is the eleventh in chronological order of founding. The University Hospital and Dispensary were established in 1898 and made a part of the organization of the School.

The School is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. The degrees of the School of Medicine are recognized by all state examining boards.

PLAN OF INSTRUCTION

The work of the School is organized under the following departments: Anatomy; Anesthesiology; Bacteriology, Hygiene, and Preventive Medicine; Biochemistry; Dermatology and Syphilology; Medicine; Military Science and Tactics; Neurology and Neurological Surgery; Obstetrics and Gynecology; Ophthalmology; Otolaryngology; Pathology; Pediatrics;

Pharmacology; Physical Medicine and Rehabilitation; Physiology; Psychiatry; Radiology; Surgery; and Urology.

The salient features in the method of instruction are thorough laboratory training, demonstrations, and clinical teaching, with recitations and lectures to clarify the many problems presented. Courses of clinical instruction are included in the announcements of the clinical departments. The clinical material in the various hospitals and outpatient departments is utilized to the fullest extent for both clinical instruction and laboratory work.

Each of the first three years of the medical curriculum is divided into two terms of sixteen weeks. First-year students begin their study with a one-week orientation program. Also in the first year students are given instruction in the arrangement of the medical library and the use of the bibliographic indexes and reference books. The senior year includes, in addition to the two sixteen-week terms, an eight-week summer term. One half of the senior class begins the summer term immediately upon completion of the junior year; the other half begins eight weeks later. Within certain limitations, students may elect the period of attendance and the service of assignment. There are no formal classes or examinations during this period.

EQUIPMENT AND FACILITIES

The George Washington University Hospital.—The hospital, with a capacity of 400 beds, was opened in 1948. This splendid edifice, which is one of the outstanding hospitals in the United States, is completely furnished with the latest and most scientific apparatus and equipment. Its purpose is to supplement existing hospital resources in the District of Columbia for the care of the sick and the injured; the education of physicians, nurses, and technicians; and the advancement of medical knowledge.

The hospital is staffed and controlled by the Faculty of the George Washington University School of Medicine and it provides excellent clinical material for the instruction of medical students. Virtually every specialty in the fields of medicine and surgery has assigned space and equipment in both the outpatient department and the bed-patient section of this modern institution.

Medical School Building.—The building housing the School of Medicine is a five-story structure with lecture rooms, classrooms, students' rooms, and the following laboratories: anatomy, histology and embryology, biochemistry, physiology, pathology, and clinical microscopy.

Laboratories.—A four-story laboratory building is adjacent to the main medical building. The major laboratories are for bacteriology, hygiene and preventive medicine, and pharmacology. They are fully equipped to enable students to pursue adequately the laboratory courses

and to acquire the technical skill necessary in modern clinical and investigative work.

Research Building.—The Research Building houses the George Washington University Cancer Clinic; special laboratories of the National Cancer Institute; and special laboratories concerned with the biochemical, pharmacological, and cytological aspects of cancer research; pharmacological laboratories for the synthesis and study of radiocarbon drugs; and other research laboratories of the Biochemistry, Physiology, and Surgery departments.

Medical Library.—The Medical Library contains a selected reference collection of more than 10,000 volumes, currently obtains important new medical works, and regularly receives the principal medical journals.

Inter-library loan service is maintained by close cooperation with other medical and scientific libraries throughout Washington and vicinity.

The Medical Library is open from 9:00 A.M. to 9:00 P.M. each class day, Monday through Friday, and from 9:00 A.M. to 1:00 P.M. Saturday.

The Medical Library maintains a branch in Room 6037-A of the University Hospital for reference, research, and inter-library loan service. It is open from 2:00 to 6:00 P.M. Monday through Friday.

GOVERNMENT LIBRARIES AND MUSEUMS

The Library of the Surgeon General's Office of the United States Army is the most complete general medical library in the world. In addition to its great collection of medical works, all leading medical periodicals of the world are available. This Library, as well as the Library of Congress, the Public Library, and the many excellent libraries of the various government departments, is available to students and teachers through a service maintained by the Medical School Library.

The Army Institute of Pathology affords opportunity for studying the conditions met in military and general medicine and surgery. Its collection of anatomical and pathological specimens is unequalled in this country. The Museum of Hygiene, the National Museum, the Smithsonian Institution, the Botanic Gardens, and the Department of Agriculture all afford opportunities for study in Medicine and its allied sciences.

CLINICS

The City of Washington, with about a million inhabitants, provides ample clinical material. The University Hospital and Outpatient Department furnish clinical facilities and a large proportion of the materials studied in the courses in pathology and clinical pathology.

The University Hospital.—All clinics are under the supervision of the Dean, who is also Medical Director of the Hospital. This insures the

highest possible utilization of available clinical material for teaching purposes and the proper supervision of clinicians and students; it brings the individual student into direct contact with patients and requires him to do, under authoritative supervision, the clinical and laboratory work necessary for diagnosis and treatment; and it permits proper interpretation of the conditions occurring during the progress of cases and promotes the keeping of adequate records. Clinical and clinico-pathological conferences are held in which the history of cases, the physical findings, laboratory records, and the post-mortem pathology when available, are presented and correlated.

The Outpatient Department.—The Outpatient Department has clinical facilities for each Service in the Hospital. Fourth-year students are assigned in rotation by section for clinical instruction in the Outpatient Department.

Cancer Clinic.—The facilities of the Cancer Detection Clinic are available to medical students. In addition the diagnosis and treatment of various forms of neoplasms are presented. The results of the treatment of neoplasms are evaluated by follow-up studies.

The Helen L. and Mary E. Warwick Memorial, for cancer and allied diseases, was affiliated with The George Washington University in July 1948. The purposes of this clinic are (1) to provide care for cancer patients, through group consultations within a cancer organization, and (2) to provide training for physicians in the field of oncology.

Gallinger Municipal Hospital.—Clinical instruction is available in all branches of medicine. A great wealth of clinical material is afforded in this hospital and by ordinance of the municipal authorities of the District of Columbia, members of the Faculty of this School of Medicine, who are nominated by this University, are assigned approximately one-third of the patients for treatment and clinical study. Third-year students serve their clinical clerkships at this institution.

Children's Hospital.—Clinical instruction in pediatrics, dermatology, and orthopedic surgery.

Emergency Hospital and Central Dispensary.—Clinical instruction in medicine, surgery, and the specialties.

St. Elizabeths Hospital.—Clinical instruction in mental and nervous diseases, medicine, post-mortem work, and gross pathology. This hospital with 6,800 beds, is maintained by the United States Government. The psychiatric clinic is one of the largest in the world.

Mt. Alto Hospital.—Clinical instruction in medicine and surgery is available and fourth-year students are assigned in rotation by sections for clinical clerkships.

Walter Reed General Hospital.—Clinical instruction is available in all branches of medicine and surgery. Fourth-year students are assigned in rotation by sections for clinical instruction.

ADMISSION

Ninety hours of credit applicable toward a degree in this University or another college of liberal arts and sciences are required for admission to the School of Medicine.

A credit hour represents one class hour or a minimum of two laboratory hours a week for a period of one term of approximately sixteen weeks.

PREMEDICAL COLLEGE REQUIREMENTS

Ninety Credit Hours

1. Chemistry, sixteen credit hours as follows: (a) eight credit hours in general inorganic chemistry of which at least four credit hours are laboratory work (qualitative analysis may be counted as general inorganic chemistry); (b) eight credit hours or a one-year college course of organic chemistry, including laboratory work.

2. Physics, eight credit hours, of which at least two credit hours are laboratory work. It is recommended that this course be preceded by one in trigonometry.

3. Biology, eight credit hours, of which at least four credit hours are laboratory work. This requirement may be satisfied by a course of eight credit hours in either general biology or zoology, or by four credit hours each in zoology and botany, but not by botany alone.

4. English composition and literature, six credit hours: the usual introductory college course or the equivalent. The student should develop facility in speaking and writing English.

5. Modern foreign language: a reading knowledge, preferably of French or German.

6. Electives. It is recommended that the remaining credit hours required include: (a) comparative vertebrate anatomy; (b) qualitative and quantitative chemical analysis; (c) social science and psychology.

ADVANCED STANDING

A student who has satisfactorily attended one or two years at any other approved medical school, and who has the necessary preliminary educational requirements, may be admitted to advanced standing.

APPLICATION FOR ADMISSION

1. Full directions for application will be furnished on request. The applicant should ask the registrar of each college previously attended to send an official transcript of record to the Director of Admissions, The George Washington University. Photostatic copies of credentials without the original signature of the certifying authority are not satis-

factory. It is the responsibility of the applicant to see that all credentials are forwarded to the Admissions Office of the University.

2. A recent photograph, with signature, is required of each applicant.

3. As the number of qualified applicants for admission to the School each year far exceeds its capacity, the candidate for admission should secure from the colleges attended completely compiled premedical credentials and send them for evaluation well in advance of the term for which he is applying.

4. Applicants for admission are urged to take the Medical College Aptitude Test of the Association of American Medical Colleges.

5. A fee of \$5 to defray the costs of completing the records for final consideration for admission must accompany each application.

REGISTRATION

For the academic year 1953-54, registration will be conducted at the Medical School, 1335 H Street NW., from 10:00 A.M. to 4:00 P.M., September 17 and 18. Registration is for a period of one academic year.

FEES AND FINANCIAL REGULATIONS

The following fees have been adopted:

Tuition fee, for each academic year.....	\$750.00
Fee for special examinations, for each subject.....	5.00
Graduation fee	20.00

PAYMENT OF FEES

Fees for each term are \$375, payable in advance.

All fees are payable at the Office of the Cashier of the University, 725 Twenty-first Street NW. Fees due must be paid at the time of registration; no student is permitted to complete registration or to attend classes until fees are paid.

Registration in the School of Medicine is for a period of one academic year. After the student has entered the courses of instruction he is obligated for the full tuition for the academic year. No part of the tuition will be refunded upon withdrawal or dismissal for any cause. Acceptance by the School of a student's fees does not in any way obligate the School to accept the student for any subsequent year, and the right is reserved to drop any student from the School whenever, in the interest of the student or the School, the Faculty deems it advisable to do so.

Because the number of applicants far exceeds the limit of each class, places can be reserved only for those qualified applicants who remit a deposit of \$100 which will be credited toward the tuition of the first term. Under no circumstances will this deposit be refunded.

Credit for work will not be given until, at the completion of a laboratory course, the student has replaced or paid for all articles of equipment or other University property which he has lost, broken, or destroyed. All breakage or loss not directly traceable to an individual student is assessed pro rata.

COST OF TEXTBOOKS AND STUDENT EQUIPMENT

The minimum cost of necessary textbooks and student equipment (microscope, drawing materials, glass slides, clinical thermometer, stethoscope, hemocytometer, etc.) is approximately as follows: first year, \$400; second year, \$250; third year, \$90; fourth year, \$80; total, \$820.

A fee of \$1 a term is charged for the use (optional) of a locker.

LOAN FUNDS

For information concerning loan funds consult the chairman of the Committee on Student Loans and Scholarships, The George Washington University.

REGULATIONS

Students in the School of Medicine are subject to, and are expected to familiarize themselves with, the general University regulations, stated in the University Catalogue.

ABSENCE

Absence consists in being away from a class or clinic during a scheduled period, entering after the class or clinic has begun, or leaving before either is dismissed.

Excuse for absence due to sickness must be accompanied by a certificate signed by the attending physician and must be filed in the Office of the Dean.

For every unexcused absence a department will deduct one-half of one per cent from the student's final grade in the subject involved.

GRADES

The following grading system is used: *A* (90-100); *B* (80-89); *C* (75-79); *D* (65-74) condition; *E* (below 64) failure; *Inc.*, incomplete. The passing grade in each subject is *C*.

A student who is conditioned in any subject will not be advanced until such condition is removed and then only by authority of the Committee on Scholarship. All conditions must be removed at the next make-up examination period provided for this purpose.

EXAMINATIONS

Examinations, which may be written, oral, or practical, will be held at the end of each term.

A student who fails to appear at a regularly scheduled final examination will not be examined until the next regular examination, except by special permission of the Committee on Scholarship. For make-up examinations to remove conditions, a fee of \$5 will be charged for each subject.

All students in the School of Medicine are required to take Part I and Part II of the National Board Examinations, except that students from those states and foreign countries which do not recognize the National Board may be exempted from Part II by action of the Committee on Scholarship.

APPLICATION FOR GRADUATION

Application for a degree should be filed in the Office of the Registrar at the time of registration for the senior year.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions, reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. It also provides first aid in the event of an emergency.

Medical privileges include: (1) the physical examination of all entering students; (2) three visits by the University physician or surgeon, office or residence (District of Columbia) in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve-month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed, if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits.

PHYSICAL EXAMINATIONS

All first-year students are given a comprehensive physical examination upon admission to the School of Medicine. The students are informed of the findings and advised regarding such measures as will tend to maintain a high standard of health.

In addition medical students benefit from the complete Tuberculosis Case Finding Program which the School has maintained since 1938-39. Under this program all students receive tuberculin tests, X-ray examinations, and such special attention from chest specialists as is necessary to reduce to a minimum the dangers from tuberculosis. Students are immunized against those diseases for which proven prophylactics exist.

AWARDS

John Ordronaux Prize.—This prize of \$150 is awarded annually to the member of the graduating class of the School of Medicine who has completed the four-year medical course with the highest scholastic standing. In 1951-52 this prize was awarded to Richard Edwin Hunton.

Anna Bartsch Scholarship.—This scholarship, in the amount of \$500, established in 1946 by Dr. Anna Bartsch-Dunne as a memorial to her mother, Anna Bartsch, is awarded annually to a woman in the School of Medicine "of outstanding scholarship, character, and promise, who intends to make the practice of medicine her life profession." For the year 1952-53 this scholarship was awarded to Mary Alice Blue.

Anna Bartsch Internship.—In memory of her mother, Anna Bartsch, Dr. Anna Bartsch-Dunne established in 1946 a fund to aid in the support of an internship. This aid, in the amount of \$15 a month, is awarded annually to a woman holding an internship in the University Hospital. For the year 1952-53 this internship was awarded to Kay Williams.

HONOR SOCIETIES

William Beaumont Medical Society.—Medical students showing unusual ability are elected by the active members of this society, which was founded to encourage and stimulate individual investigation.

Howard Kane-A. F. A. King Obstetrical Society.—The fifteen students in the third and fourth year classes who maintain the highest grades in their work in obstetrics are eligible for membership.

Smith-Reed-Russell Society.—Students of the third and fourth years who maintains a scholastic average of 88 per cent are eligible for membership.

RESERVE OFFICERS' TRAINING CORPS, U. S. ARMY, MEDICAL UNIT

A Medical Unit of the Reserve Officers' Training Corps is established in this School by authority of the Secretary of the Army, and an officer of the Medical Corps of the Army is detailed to the University for supervision and instruction of the unit.

The instruction is divided into two two-year courses, the basic and the advanced. Each course consists of 90 hours—58 hours of prescribed medical instruction given by the Medical School and 32 hours of military medical instruction. Students who satisfactorily complete the basic course may, up to the quota allowed by the Department of the Army, enter the advanced course. Students in the advanced course receive, from the Government, a stipend of approximately \$700.

Students in the advanced course are required to complete the course and to attend a summer training period of six weeks.

A student who successfully completes the course is recommended for a commission in the Medical Corps Reserve. It is the policy of the Department of the Army to give preference to graduates of this course in the selection for Army internship.

Membership in the Unit, which is voluntary, is open to any physically fit male student who is a citizen of the United States and who is, at the time of enrollment, within the following specified age limits: under 29 years for the basic course, under 31 years for the advanced course. Veterans with a minimum of six months' service receive credit for the first year of the elementary course; those with a minimum of twelve months' service receive credit for both years of the basic course.

LIVING ACCOMMODATIONS

Women Students.—Women students under twenty-one years of age who are enrolled for twelve or more credit hours of academic work in the University must have their residences approved by the Director of Activities for Women before their registrations can be completed. In the Hattie M. Strong Residence Hall, single rooms are \$35 a month;

double rooms are \$30 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Dining facilities are available to all residents. Single and double rooms are provided for 132 students in Draper Hall, a temporary dormitory. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students. Meals are served at the Student Union. Application forms for reservations may be obtained from Director of Activities for Men.

Information concerning private rooming and boarding facilities near the University for women students twenty-one years of age or older and for men students may be obtained at the Housing Office, 814 Twenty-second Street NW. The reservation of rooms in private houses must be made by students.

THE DEGREE OF DOCTOR OF MEDICINE

Upon the satisfactory completion of the requirements of the School of Medicine, the degree of Doctor of Medicine is conferred.

REQUIREMENTS FOR THE DEGREE

Every candidate for graduation with the degree of Doctor of Medicine must be at least twenty-one years of age, of reputable character, and free of all indebtedness to the University. He must have satisfied the admission requirements, completed satisfactorily not less than four academic years of study as a matriculated student in Medicine, completed all required courses, and passed satisfactorily all prescribed examinations.

COMBINED ARTS AND MEDICINE CURRICULUM

In order to be recommended for the degree of Bachelor of Arts, the candidate must complete at least ninety credit hours of prescribed college work (at least thirty credit hours and one year of residence must be completed in Columbian College, the senior liberal arts college), and the first year of the medical curriculum. Upon satisfactory completion of the fourth year of the medical curriculum the student becomes eligible for the degree of Doctor of Medicine.

HONORS

A candidate who has completed the four-year medical course with an average grade of *A* may be recommended for graduation "with distinction."

INTERN AND RESIDENT TRAINING PROGRAM

The George Washington University Hospital offers rotating-type internships as classified by the Interassociation Committee on Internships. Twenty-four internships of one year each are offered; thirteen in the Department of Medicine with emphasis on medicine, ten in the Department of Surgery with emphasis on surgery, and one in the Department of Pathology with emphasis on pathology.

Rotating Internships, Emphasis on Medicine.—Interns will be assigned to seven months of general medicine, two months on the surgical service, and one month each on neuro-psychiatry, pediatrics, and obstetrics and gynecology.

Rotating Internships, Emphasis on Surgery.—Interns will be assigned to the surgical service for nine months, to general medicine for two months, and to obstetrics and gynecology for one month.

Rotating Internships, Emphasis on Pathology.—Interns will be assigned to the pathology service for eight months, to general medicine for two months, and to surgery for two months.

A total of approximately forty-two approved residences are offered in anesthesiology, cardiac disease, internal medicine, neurologic surgery, obstetrics-gynecology, oral surgery, pathology, physical medicine, psychiatry, roentgenology, surgery and thoracic surgery. Residency programs are of from one to four years depending upon the service. Appointments are for one year subject to renewal. In several of the fields there are affiliations with local voluntary and government hospitals.

Fellowships of one or two years are available to acceptable candidates in anesthesiology, cardiology, chest diseases, infectious diseases, outpatient service, physical medicine, rheumatic diseases, surgery and thoracic surgery.

For application blanks and further information, address the Superintendent, The George Washington University Hospital, Washington 7, D. C.

POSTGRADUATE INSTRUCTION

The School of Medicine offers annually a series of short intensive postgraduate courses, varying somewhat from year to year. The series is designed for physicians in practice. The significant advances in the various specialties are presented, together with summaries of older information.

The Kellogg Medical Lectures, inaugurated in 1948, are a series of evening lectures and clinics, presented by distinguished physicians from other cities, designed primarily for physicians practicing in Washington and the vicinity. They are also attended by the Faculty, postgraduate students, and members of the senior class of the School of Medicine.

During the academic year 1951-52 approximately 119 physicians were

enrolled in postgraduate courses. For application blanks and further information, address the Director of Postgraduate Instruction, The George Washington University Hospital, Washington 7, D. C.

MEDICAL TECHNOLOGIST COURSE

The course for medical technologists consists of twelve consecutive months of didactic and practical work in all phases of clinical laboratory technique. The course meets the full requirements of the Registry of Medical Technologists of the American Society of Clinical Pathologists. Prerequisites are 60 credit hours (two academic years) of college work including required credits in biology and chemistry.

Two classes are accepted each year, one entering in September and the other in March. Enrollment in each class is strictly limited so that personal instruction can be given.

Upon satisfactory completion of the course a certificate is awarded and the candidate is eligible for the certifying examination given by the Registry of Medical Technologists.

For application blanks and further information, address the Director of Laboratories, The George Washington University Hospital, Washington 7, D. C.

COURSES OF INSTRUCTION

On the following pages of this BULLETIN, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered by the School of Medicine. The School of Medicine serves other divisions of the University by making available to non-medical students certain undergraduate and graduate courses in the following fields: Anatomy, Bacteriology, Biochemistry, Pathology, Pharmacology, Physical Medicine, and Physiology. The courses listed are subject to some slight change. The University reserves the right to withdraw any course announced.

EXPLANATION OF COURSE NUMBERS AND SYMBOLS

The number which precedes the name of a course indicates the term of the academic year in which the course is offered. An odd number indicates that the course is offered in the fall term; an even number, that it is offered in the spring term; and a double number (e.g., 343-44), that it begins in the fall term and continues in the spring.

A number in parentheses after the name of a course, indicates credit hours which may be earned by nonmedical students.

First-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and fourth-year courses, from 401 to 500.

Courses offered in the School of Medicine for nonmedical students.—Courses numbered from 101-200 are planned for upper-division students in undergraduate curricula. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the dean responsible for the graduate work and by the officer of instruction, and when the completion of additional work has been certified by the officer of instruction. Courses numbered from 201 to 300 are planned for graduate students.

ANATOMY

Claude Matthews McFall, LL.B., Ph.D., *Professor of Anatomy, Executive Officer*

*Webb Edward Haymaker, M.S., M.D., *Professorial Lecturer in Anatomy*

Richard Ray Cameron, A.B., M.D., *Professorial Lecturer in Anatomy*

‡Paul Calabrisi, A.M., *Associate Professor of Anatomy*

Ivor Cornman, Ph.D., *Assistant Research Professor of Anatomy*

~~Edgar Pleasant Jayne, Ph.D., Assistant Professor of Anatomy~~

Wilfred Walter Eastman, B.S., M.D., *Clinical Instructor in Anatomy*

Alan Andrews Dun, A.B., M.D., *Clinical Instructor in Anatomy*

Lloyd Eugene Church, M.S., D.D.S., *Clinical Instructor in Anatomy*

Charles Jerome Everding, B.S., M.D., *Clinical Instructor in Anatomy*

Howard Clementh Pierpont, A.B., M.D., *Clinical Instructor in Anatomy*

Eberhard Georg Trams, B.S., *Instructor in Anatomy*

101-2 *Gross Anatomy*

McFall and Staff

Regional dissection of the human body supplemented with lectures and quiz sections. Study of X-ray anatomy to emphasize the functional aspects of the position, shape, and relation of the viscera and skeletal components. Eighteen hours a week, fall term; nine hours a week, spring term.

103 *Human Embryology*

McFall and Staff

The origin and development of the human body. Special emphasis on the value of embryology in interpreting anatomical anomalies and variations as seen in gross dissection, surgery, obstetrics, and pathology. Three hours a week.

105 *Neuro-anatomy*

Haymaker and Staff

The macroscopic and microscopic study of the central nervous system and the special sense organs. Emphasis on such dynamic aspects as development, pathways, lesions, etc. Six hours a week.

106 *Microscopic Anatomy*

Jayne and Staff

Study of the detailed minute structure of cells, tissues, and organs of the human body with emphasis on the relation of structure to function. Recognition and interpretation of histological sections tested by practical examinations. Six hours a week.

201-2 *Seminar (1-1)*

McFall and Staff

Reports and discussions of special topics by the Staff and graduate students. For graduate liberal arts students. Regular medical students are encouraged to attend. One hour a week.

295-96 *Research (arr.)*

McFall and Staff

Time, credits, and fees to be arranged.

299-300 *Thesis (3-3)*

The Staff

* On leave of absence 1952-53.
‡ On sabbatical leave 1952-53.

ANESTHESIOLOGY

Charles Seymour Coakley, M.D., *Professor of Anesthesiology, Executive Officer*

Donald Harrison Stubbs, A.M., M.D., *Clinical Professor of Anesthesiology*

Seymour Alpert, A.B., M.D., *Associate Professor of Anesthesiology*

William Albert Spencer, A.B., M.D., *Instructor in Anesthesiology*

William Eldridge Bageant, M.D., *Clinical Instructor in Anesthesiology*

Allen Widome, M.D., *Clinical Instructor in Anesthesiology*

Solomon Naphtali Albert, A.B., D.A., M.D., *Fellow in Anesthesiology*

320 *Anesthesiology*

Review of basic sciences, correlation between basic sciences and clinical work. One hour a week. Third year students. The Staff

351-52 *Anesthesia Seminar*

Fourth-year students attend anesthesia seminars during their surgical clinical clerkships at the University Hospital. One hour a week. The Staff

433-34 *Advanced Anesthesiology*

Fourth-year students are rotated through the work of the department for a period of one week and assigned to work in the operating rooms and to attend conferences and seminars. For the more advanced students a three-week elective is offered. The Staff

BACTERIOLOGY, HYGIENE, AND PREVENTIVE MEDICINE

Leland Wilbur Parr, Ph.D., *Professor of Bacteriology, Executive Officer*
 Angus MacIvor Griffin, Ph.D., *Professor of Bacteriology*
 Ralph Gregory Beachley, M.D., Dr.P.H., *Adjunct Professor of Public Health Practice*
 Mary Louise Robbins, Ph.D., *Associate Professor of Bacteriology*
 William Gray McCarten, M.S., *Instructor in Bacteriology*
 Vernon Jack Fuller, B.S., *Sanders Fellow in Bacteriology*
 Andrew John Vargasko, Jr., B.S., *Fellow in Bacteriology*

SEMINAR LECTURERS

Charles Armstrong, B.S., M.D., Sc.D., *Professorial Lecturer in Preventive Medicine*
 Sara Elizabeth Branham, Ph.D., M.D., Sc.D., *Professorial Lecturer in Preventive Medicine*
 Chester Wilson Emmons, Ph.D., *Professorial Lecturer on Medical Mycology*
 Willard Hull Wright, D.V.M., Ph.D., *Professorial Lecturer on Medical Zoology*
 John Roderick Heller, Jr., B.S., M.D., *Professorial Lecturer on Cancer Control*
 Carl John Lauter, M.S., *Professorial Lecturer on Municipal Sanitation*
 Robert Carter Cook, *Professorial Lecturer on Medical Genetics*
 Robert Hanna Felix, M.D., M.P.H., *Professorial Lecturer on Mental Hygiene*
 Francis Byron Gordon, Ph.D., M.D., *Professorial Lecturer on Virology*
 Edward Kramer Funkhouser, B.S., *Professorial Lecturer on Community Health Resources*

112 General Bacteriology (4)

Robbins

For nonmedical students. A study of the fundamentals of bacteriology, including hygienic applications. Methods of cultivation and control of several groups of microorganisms are studied in the laboratory. Prerequisite: any biological laboratory science; Chemistry 11-12. Laboratory fee, \$9. Tues., Thurs., and Sat., 9:10 to 12:00 A.M.

209 Medical Microbiology (1-11)

Parr, Griffin

Bacteria, rickettsia, viruses, yeasts, molds, protozoa, and metazoa which relate to the health and diseases of man—cultural study of most important forms; methods of diagnosis by microscopic, cultural, immunologic, and animal reactions; theory and methods of immunology; vaccines; serums; antibiotics. Open to suitably prepared graduate students; may be elected as a whole or in part by adding the

appropriate letter to the course number, with credit allocated as follows: (a) *Bacteriology*, including rickettsia and viruses—lecture (4), laboratory (3); (b) *Parasitology*, including medical mycology—lecture (2), laboratory (1); (c) *Immunology* (1). May be taken by a limited number of candidates for Master's degrees. Laboratory fee, \$3 for each credit hour of laboratory work. Time to be arranged.

210 *Fundamentals of Epidemiology and Public Health* (2)

Parr and Staff

Sources, modes, and implications of infection and injury. Consideration also given the problems of accidents and industrial medicine. Open to liberal arts graduate students. Prerequisite: *Bacteriology* 112 or 209. Mon., 2:00 to 4:00 P.M.

219-20 *Advanced Microbiology* (arr.)

Griffin and Staff

Special study of advanced methods and current problems in microbiology for suitably qualified students specializing in microbiology. Prerequisite: *Bacteriology* 112 or 209; *Chemistry* 151-52 or the equivalent; permission of the instructor. Laboratory fee, \$3 a credit hour. Time and credits to be arranged.

229 *Virus Techniques* (6)

Robbins

Principal cultural and serological methods used in the study of viruses and rickettsiae. For liberal arts graduate students. Prerequisite: *Bacteriology* 112 or 209 and permission of the instructor. Laboratory fee, \$10. 1954-55 and alternate years.

230 *Statistics in Microbiology* (3)

Griffin

The application of statistical methods to the problems of microbiology. For liberal arts graduate students. Prerequisite: entrance or elementary college algebra. 1953-54 and alternate years, time to be arranged.

232 *Immunological Methods* (3)

Griffin

Preparation and testing of serological materials. Demonstration of basic serological phenomena. For liberal arts graduate students. Prerequisite: *Bacteriology* 112 or 209 and permission of the instructor. Laboratory fee, \$6. 1954-55 and alternate years.

240 *Advanced Epidemiology and Public Health* (3)

Parr

Conferences, readings, and problems for graduate students dealing with specialized and advanced phases of the topics presented in *Bacteriology* 210. Prerequisite: *Bacteriology* 210. 1953-54 and alternate years, time to be arranged.

293-94 *Staff Seminar* (1-1)

The Staff

For liberal arts graduate students. Bi-weekly throughout the year. Time to be arranged.

295-96 *Research in Bacteriology* (arr.)

The Staff

Time and credits to be arranged.

299-300 *Thesis* (3-3)

The Staff

340 *Health Resources Survey*

Beachley and Staff

A survey of complete medical care from first contact, through laboratory and clinical diagnosis, adequate medical or surgical treatment to full family and community rehabilitation. Case histories assigned junior students with the cooperation and assistance of the clinical departments. Comparison is to be made between care in near-ideal facilities and care in facilities where the student might begin his practice. Emphasis is on coordination of the private practice of medicine and community public health and welfare activities, both tax supported and voluntary. Throughout the holistic point of view is assumed. One hour a week for three weeks and independent research during summer.

401 *Public Health Practice*

Beachley

Study of public health practice at national, state, city, and county levels. Public and private agencies. One hour a week for eight weeks.

BIOCHEMISTRY

Joseph Hiram Roe, Ph.D., *Professor of Biochemistry, Executive Officer*
 Carleton Raymond Treadwell, Ph.D., *Professor of Biochemistry*
 William Henry Sebrell, Jr., M.D., *Professorial Lecturer on Nutrition*
 *George Washington Irving, Jr., Ph.D., *Professorial Lecturer on Proteins*
 Bernard Leonard Horecker, Ph.D., *Professorial Lecturer on Enzymes*
 Mary Mills Monier, Ph.D., *Assistant Professor of Biochemistry*
 Benjamin Williams Smith, Ph.D., *Assistant Professor of Biochemistry*
 Klaus Schwarz, M.D., *Associate in Biochemistry*
 Harold Clark, Jr., Ph.D., *Associate in Biochemistry*
 William Arthur Wood, B.S., *Sanders Fellow in Biochemistry*
 Tze-Tung Tang, M.S., *Sanders Fellow in Biochemistry*
 Victor Schocken, Ph.D., *Fellow in Biochemistry*
 Seymour Byer, B.S., *Fellow in Biochemistry*
 Nicholas Papadopoulos, B.S., *Fellow in Biochemistry*

113-14 *Biochemistry*

Roe and Staff

Physiological and clinical chemistry for the first-year medical student.
 Two lectures, one conference hour, and two three-hour laboratory periods a week.

221-22 *Biochemistry (4-4)*

Treadwell

A lecture and laboratory course for nonmedical students. Prerequisite: Chemistry 22 and 152. Material fee, \$12 a term. Tues. and Thurs., 9:00 to 12:00 A.M. and 1:00 to 2:00 P.M.

224 *Biochemistry of the Enzymes (1)*

Horecker

Lecture course dealing with the biochemistry of the enzymes and enzyme reactions. Prerequisite: Biochemistry 113 or 221. Mon., 5:00 P.M.

225 *Biochemical Preparations (3)*

The Staff

For liberal arts graduate students. Material fee, \$12. Time to be arranged.

226 *Biochemical Laboratory Methods (3)*

The Staff

For liberal arts graduate students. Material fee, \$12. Time to be arranged.

227-28 *Biochemistry Seminar (1-1)*

Roe

The current literature in the field of biochemistry, mainly for graduate students, but open to a limited number of specially qualified medical students. Fri., 4:00 P.M.

231 *Proteins and Amino Acids (1)*

Irving

A lecture course for liberal arts graduate students. Prerequisite: Biochemistry 114 or 222. 1953-54 and alternate years, Mon., 5:00 P.M.

* On leave of absence 1952-53.

- 251 *Carbohydrate Metabolism* (1) Roe
A lecture course. Prerequisite: Biochemistry 114 or 222. 1954-55
and alternate years, Sat., 9:00 A.M.
- 261 *Biochemistry of the Lipids* (1) Treadwell
A lecture course. Prerequisite: Biochemistry 114 or 222. 1953-54
and alternate years, Sat., 9:00 A.M.
- 295-96 *Research in Biochemistry* (arr.) Roe, Treadwell
Time and credits to be arranged.
- 299-300 *Thesis* (3-3) Roe, Treadwell
- 404 *Applied Nutrition* (1) Sebrell
For senior medical students and graduate students. Lecture course
upon dietary requirements, deficiency diseases, and therapeutic diets.
Prerequisite: Biochemistry 113 or 221, Sat., 11:00 A.M.

DERMATOLOGY AND SYPHILOLOGY

Harry Ford Anderson, M.D., *Professor of Dermatology and Syphilology,
Executive Officer*

George William Creswell, A.B., M.D., *Assistant Clinical Professor of
Dermatology and Syphilology*

Hayden Kirby-Smith, B.S., M.D., *Assistant Clinical Professor of Der-
matology and Syphilology*

Theodore Claremont Chen Fong, M.D., *Associate in Dermatology and
Syphilology*

James Quincy Gant, Jr., M.S., M.D., *Associate in Dermatology and
Syphilology*

Wendell Melvin Willett, M.D., *Associate in Dermatology and Syphi-
logy*

Reuben Goodman, M.D., *Clinical Instructor in Dermatology and Syphi-
logy*

313-14 *Dermatology and Syphilology*

Lectures on diseases of the skin and syphilis. One hour a week.

The Staff

316 *Neurosyphilis*

Lectures, clinical demonstrations, and practical diagnostic and thera-
peutic procedures.

Fong

317-18 *Clinic*

Case demonstrations, diagnosis, and treatment of skin diseases and
syphilis. Gallinger Hospital.

The Staff

407-8 *Clinic*

Dermatology and syphilology in infants and children. Childrens Hos-
pital. Two hours a week.

The Staff

409-10 *Clinic*

Clinical demonstration, diseases of the skin. Two hours a week.
Emergency Hospital.

The Staff

411-12 *Clinic*

Clinical demonstrations, diseases of the skin, and diagnosis and
therapy of syphilis. Two hours a week. University Hospital.

The Staff

MEDICINE

- Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Professor of Medicine*
 Thomas McPherson Brown, A.B., M.D., *Professor of Medicine, Executive Officer*
 Paul Frederick Dickens, M.D., *Clinical Professor of Medicine*
 Charles Robert Lee Halley, A.B., M.D., *Clinical Professor of Medicine*
 Clayton Bernard Ethridge, M.D., *Clinical Professor of Medicine*
 Sol Katz, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Louis Katz Alpert, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Joseph Francis Fazekas, B.S., M.D., *Adjunct Clinical Professor of Medicine*
 Harry Eagle, A.B., M.D., *Professorial Lecturer in Medicine*
 Robert William Berliner, B.S., M.D., *Professorial Lecturer in Medicine*
 Henry Field, Jr., M.D., *Professorial Lecturer in Medicine*
 Monroe James Romansky, A.B., M.D., *Associate Professor of Medicine*
 Peter Diacoumis Comanduras, M.D., M.S. in Med., *Associate Clinical Professor of Medicine*
 John McCallum Evans, A.B., M.D., *Associate Clinical Professor of Medicine*
 Walter Kendall Myers, B.S., M.D., *Assistant Clinical Professor of Medicine*
 John Alton Reed, A.B., M.D., *Assistant Clinical Professor of Medicine*
 Theodore Judson Abernethy, B.S., M.D., *Assistant Clinical Professor of Medicine*
 William Travis Gibb, Jr., A.B., M.D., *Assistant Clinical Professor of Medicine*
 Roy Hertz, Ph.D., M.D., *Assistant Clinical Professor of Medicine*
 Alfred Henry Lawton, M.D., Ph.D., *Assistant Clinical Professor of Medicine*
 Samuel Ross Taggart, M.D., *Assistant Clinical Professor of Medicine*
 Benjamin Manchester, M.D., *Assistant Clinical Professor of Medicine*
 Clarence Richard Hartman, A.B., M.D., *Assistant Clinical Professor of Medicine*
 Pearl Holly, M.S., M.D., *Assistant Clinical Professor of Medicine*
 James Joseph Feffer, A.B., M.D., *Assistant Clinical Professor of Medicine*
 John Coleman Nunamaker, M.S., M.D., *Assistant Clinical Professor of Medicine*
 Watson William Eldridge, Jr., M.D., *Associate in Medicine*
 Maurice Protas, A.B., M.D., *Associate in Medicine*
 John Minor, A.B., M.D., *Associate in Medicine*

- Lawrence Jay Thomas, B.S., M.D., *Associate in Medicine*
 Lawrence Elias Putnam, A.B., M.D., *Associate in Medicine*
 John Watkins Trenis, A.B., M.D., *Associate in Medicine*
 Bernard Lauriston Hardin, Jr., A.B., M.D., *Associate in Medicine*
 Albert David Kistin, A.M., M.D., *Associate in Medicine*
 Charles William Ordman, A.B., M.D., *Associate in Medicine*
 Andrew Gabriel Prandoni, B.S., M.D., *Associate in Medicine*
 Ruth Hechler Wichelhausen, M.D., *Associate in Medicine*
 Benjamin Calloway Jones, Jr., A.B., M.D., *Associate in Medicine*
 Richard Bernard Castell, A.B., M.D., *Associate in Medicine*
 Myer Harold Stolar, B.S., M.D., *Associate in Medicine*
 Sam Thompson Gibson, B.S., M.D., *Associate in Medicine*
 Walter Lewis Nalls, B.S., M.D., *Associate in Medicine*
 Alfred Brigulio, M.D., *Associate in Medicine*
 Halla Brown, M.D., *Associate in Medicine*
 Ralph Bretney Miller, A.B., M.D., *Associate in Medicine*
 Thomas Stone Sappington, A.B., M.D., *Associate in Medicine*
 John Christian Ransmeier, A.B., M.D., *Associate in Medicine*
 Monte Arnold Greer, A.B., M.D., *Associate in Medicine*
 Thomas James Kennedy, Jr., B.S., M.D., *Research Associate in Medicine*
 Jack Orloff, M.D., *Research Associate in Medicine*
 Ernest Cotlove, B.S., M.D., *Research Associate in Medicine*
 Samuel Jacob Nathan Sugar, Phar.G., M.D., *Associate in Medicine*
 Joseph Ney, B.S., M.D., *Associate in Medicine*
 Joseph Beinstein, A.B., M.D., *Associate in Medicine*
 Frank Solomon Bacon, B.S., M.D., *Associate in Medicine*
 Arno Motulsky, B.S., M.D., *Research Associate in Medicine*
 James Irving Boyd, M.S., M.D., *Lecturer in Medicine*
 Elizabeth Harman Hill, M.D., *Instructor in Medicine*
 John Bayne Marbury, M.D., *Clinical Instructor in Medicine*
 Louis Ross, M.D., *Clinical Instructor in Medicine*
 James Theodore Burns, M.D., *Clinical Instructor in Medicine*
 Frederic Dunbar Chapman, A.B., M.D., C.M., *Clinical Instructor in Medicine*
 Irvin Kerlan, B.S., M.D., C.P.H., *Clinical Instructor in Medicine*
 Virginia Patterson Beelar, A.B., M.D., *Clinical Instructor in Medicine*
 Lester Sylvan Blumenthal, A.B., M.D., M.S. in Med., *Clinical Instructor in Medicine*
 Charles Edward Law, M.D., *Clinical Instructor in Medicine*
 Emil Herbert Bauersfeld, A.B., M.D., *Clinical Instructor in Medicine*
 Henry Dunlop Ecker, B.S., M.D., *Clinical Instructor in Medicine*
 John Wilmer Latimer, Jr., M.D., *Clinical Instructor in Medicine*
 Luther Henry Snyder, A.B., M.D., *Clinical Instructor in Medicine*
 Charles Wilson Jones, A.B., M.D., *Clinical Instructor in Medicine*

- Stanley William Kirstein, B.S., M.D., *Clinical Instructor in Medicine*
 Thomas Joseph Pekin, B.S., M.D., *Clinical Instructor in Medicine*
 Robert George Taylor, M.D., *Clinical Instructor in Medicine*
 Charles Waters Thompson, M.D., *Clinical Instructor in Medicine*
 Maurice Franks, A.B., M.D., *Clinical Instructor in Medicine*
 James Walling Long, M.D., *Clinical Instructor in Medicine*
 James Francis Ambury, B.S., M.D., *Clinical Instructor in Medicine*
 William Otis Bailey, Jr., M.D., *Clinical Instructor in Medicine*
 Harry Clark Bates, B.S., M.D., *Clinical Instructor in Medicine*
 Robert Norwood Coale, B.S., M.D., *Clinical Instructor in Medicine*
 Eugene Solomon Gladsden, B.S., M.D., *Clinical Instructor in Medicine*
 Israel Kessler, M.S., M.D., *Clinical Instructor in Medicine*
 Maurice Mensh, M.D., *Clinical Instructor in Medicine*
 Francis James Murray, B.S., M.D., *Clinical Instructor in Medicine*
 Edwin Pearson Parker III, B.S., M.D., *Clinical Instructor in Medicine*
 Jack Jacob Rheingold, A.B., M.D., *Clinical Instructor in Medicine*
 Morris Hirsh Rosenberg, A.B., M.D., *Clinical Instructor in Medicine*
 Jeanne Cecile Bateman, A.B., M.D., *Clinical Instructor in Medicine*
 John William Du Chez, M.D., *Clinical Instructor in Medicine*
 Thomas Lees Hartman, A.M., M.D., *Clinical Instructor in Medicine*
 William Raymond Merchant, A.B., M.D., *Clinical Instructor in Medicine*
 Boris Rabkin, A.B., M.D., *Clinical Instructor in Medicine*
 Morton Harold Rose, M.D., *Clinical Instructor in Medicine*
 George Sharpe, A.B., M.D., *Clinical Instructor in Medicine*
 Irene Gorski Tamagna, M.D., *Clinical Instructor in Medicine*
 Warren Daniel Brill, B.S., M.D., *Clinical Instructor in Medicine*
 Marvin Fuchs, B.S., M.D., *Clinical Instructor in Medicine*
 Frank Goodnow MacMurray, A.B., M.D., *Clinical Instructor in Medicine*
 William Jack Weaver, Jr., A.B., M.D., *Clinical Instructor in Medicine*
 Ruth Boshwitz Benedict, A.B., M.D., *Clinical Instructor in Medicine*
 Cyril Augustus Schulman, B.S., M.D., *Clinical Instructor in Medicine*
 Louis Aleck Craig, Jr., A.B., M.D., *Clinical Instructor in Medicine*
 Abraham Wolfe Danish, A.B., M.D., *Clinical Instructor in Medicine*
 Milton Gusack, A.B., M.D., *Clinical Instructor in Medicine*
 William Lewis, M.D., *Clinical Instructor in Medicine*
 Arthur Rosenbaum, B.S., M.D., *Clinical Instructor in Medicine*
 Alvin Seltzer, B.S., M.D., *Clinical Instructor in Medicine*
 Adolph Friedman, A.B., M.D., *Clinical Instructor in Medicine*
 Samuel Dennis Loube, A.B., M.D., *Clinical Instructor in Medicine*
 Celia White Tabor, A.B., M.D., *Clinical Instructor in Medicine*
 Alvin Edward Parrish, M.D., *Clinical Instructor in Medicine*
 Nahum Raphael Shulman, M.D., *Clinical Instructor in Medicine*
 Stewart William Bush, B.S., M.D., *Clinical Instructor in Medicine*

Jack Kleh, A.B., M.D., *Clinical Instructor in Medicine*
 Alfred John Baer, A.B., M.D., *Clinical Instructor in Medicine*
 Theodore Harry Korthals, B.S., M.D., *Fellow in Cardiovascular Diseases*
 Bernard Robert Cooperman, A.B., M.D., *Fellow in Cardiovascular Diseases*

Victor Manuel Malagon Diaz, B.S., M.D., *Fellow in Cardiovascular Diseases*
 Roy Elliot Ritts, Jr., A.B., M.D., *Research Fellow in Infectious Diseases*

132 History of Medicine

One hour a week.

The Staff

236 Clinical Microscopy

Conferences and studies in the clinical application of laboratory examinations of blood, body fluids, exudates, and excreta. Three hours a week.

The Staff

241 Physical Diagnosis I

Theoretical considerations of the principles of physical diagnosis. One hour a week.

The Staff

242 Physical Diagnosis II

Covers not only theoretical but practical application of principles of physical diagnosis as related to examination of patients. Six hours a week.

The Staff

244 Introduction to Medicine

Lectures covering the principles of internal medicine preparatory to clinical studies and training in the inpatient and outpatient services. Four hours a week.

The Staff

320 Medical Jurisprudence

Lectures on the legal and ethical rights of physicians, and on the legal problems with which the physician comes in contact. One hour a week for sixteen weeks.

The Staff

325-26 Clinical Clerkships

Training with bed patients under individual instruction designed to develop ability in examination of patients and case taking as well as practice in clinical microscopy. Eight weeks.

The Staff

327-28 Clinical Pathological Conferences I

Required in the third year. Correlation of clinical and post-mortem findings: detailed case description from the clinical point of view followed by demonstrations of post-mortem findings. One hour a week.

The Staff

339-40 Therapeutic

Conferences I

Conferences designed to emphasize the application of pharmacologic principles to the problems of clinical medicine. One hour a week.

The Staff

349-50 Medical Conferences

Two hours a week.

The Staff

- 421-22 *Outpatient Clinics* The Staff
Individual case studies under personal supervision of the Staff. Daily clinics on current medical problems and seminars stressing physiological aspects of diseases. Individual examinations and instruction in medical specialties. University and Emergency hospitals. Eight weeks.
- 423-24 *Clinical Clerkship* The Staff
Available at the University, Emergency, Mt. Alto, and Walter Reed hospitals. Eight weeks.
- 427-28 *Clinical Pathological Conferences II* Brown, Choisser
Required in the fourth year. Continuation of 327-28. One hour a week, in rotation.
- 431 *Forensic Medicine* The Staff
Organized in conjunction with the University Law School for the purpose of acquainting medical students with their legal responsibilities. Three hours a week for four weeks.

MILITARY SCIENCE AND TACTICS

Neal Rupert Fisher, A.B., M.D., Lieutenant Colonel, Medical Corps
United States Army, *Professor of Military Science and Tactics*

129-30 *Basic Course, Senior Division ROTC*
(First Year)

Lectures designed to familiarize the student with the military policy of the United States, organization of the Army and Air Force, organization of the Army and Air Force Medical Service, map and aerial photograph reading, military law, etc.

Fisher

247-48 *Basic Course, Senior Division ROTC*
(Second Year)

Instruction in radiological defense, aviation medicine, military preventive medicine, medical aspects of chemical and biological warfare, principles of military leadership, etc.

Fisher

329-30 *Advanced Course, Senior Division ROTC**
(First Year)

A course including lectures on military medical research development, bandaging and splinting, field medicine, field surgery, aviation medicine, and military leadership.

Fisher

429-30 *Advanced Course, Senior Division ROTC**
(Second Year)

Lectures on military preventive medicine (advanced), field medicine, physical medicine in the Army, military neuropsychiatry, techniques of instructing, etc.

Fisher

*Students in the advanced course are selected from those who satisfactorily complete the basic course, or have one year active federal service.

NEUROLOGY AND NEUROLOGICAL SURGERY

Walter Freeman, Ph.D., M.D., *Professor of Neurology, Executive Officer*

James Winston Watts, B.S., M.D., *Professor of Neurological Surgery*

Hyman David Shapiro, M.D., *Associate Clinical Professor of Neurology*

Robert Henry Groh, B.S., M.D., *Assistant Clinical Professor of Neurology*

Paul Chodoff, A.B., M.D., *Associate in Neurology*

James Peter Murphy, B.S., M.D., *Associate in Neurological Surgery*

Hugo Victor Rizzoli, A.B., M.D., *Associate in Neurological Surgery*

Jonathan Marshall Williams, M.D., *Associate in Neurological Surgery*

George Davis Weickhardt, M.D., *Clinical Instructor in Neurology*

Oscar Legault, A.B., M.D., *Clinical Instructor in Neurology*

John William Kemble, A.B., M.D., *Clinical Instructor in Neurology*

Harvey Ammerman, B.S., M.D., *Clinical Instructor in Neurological Surgery*

Carlos Alberto Acevedo-Vega, M.D., *Fellow in Neurology and Neurological Surgery*

Jean Esther Toncray, M.S., M.D., *Fellow in Neurology*

Plinio Emendabili, M.D., *Fellow in Neurology and Neurological Surgery*

249 *Neurology (elective)* Freeman

Methods used to study the form and function of the nervous system. Lectures and laboratory demonstrations. One hour a week.

250 *Neurology* Shapiro

Introductory lectures on clinical neurology with specimens, lantern slides, and motion pictures. One hour a week.

331 *Neurology and Neurological Surgery* Watts, Shapiro

Clinical lectures and demonstrations. One hour a week.

333-34 *Neurology and Neurological Surgery, Clinical Clerkship* Freeman and Staff

Instruction in history, physical examination, ordinary clinical procedures. Attendance at neurosurgical operations. Gallinger Hospital. Six students in rotation, two weeks.

335-36 *Neurological Conference* Freeman and Staff

Clinical conference one afternoon a week followed by clinicopathologic study of specimens from current necropsies. Gallinger Hospital. Two and one-half hours a week. Six students in rotation, two weeks.

431-32 *Neurology and Neurological Surgery Clinic* Shapiro, Watts

Neurological outpatient clinic. Consultation of staff on ambulatory cases, demonstration of diagnostic procedures, disposition of neuro-

psychiatric cases, ward rounds. University Hospital. Six students in rotation. Two hours a week.

433-34 *Clinical Neurology*

Groh, Weickhardt

Neurological inpatient examinations and demonstrations at St. Elizabeths Hospital. Six students in rotation. Two hours a week.

436 *Neurological Surgery (elective)*

Watts and Staff

Lectures and motion picture demonstration of neurosurgical problems. One hour a week.

OBSTETRICS AND GYNECOLOGY

- John Parks, M.S., M.D., *Professor of Obstetrics and Gynecology, Executive Officer*
- Radford Brown, M.D., *Clinical Professor of Obstetrics and Gynecology*
- Jacob Kotz, M.D., *Clinical Professor of Obstetrics and Gynecology*
- Henry Lauran Darner, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
- Herbert Percy Ramsey, A.B., M.D., *Clinical Professor of Obstetrics and Gynecology*
- Robert Henry Barter, B.S., M.D., *Associate Professor of Obstetrics and Gynecology*
- George Nordlinger, A.B., M.D., *Associate Clinical Professor of Obstetrics and Gynecology*
- Laurence Lee Cockerille, M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- Samuel Mayor Dodek, A.M., M.D., *Assistant Clinical Professor of Obstetrics and Gynecology*
- Howard Pope Parker, A.B., M.D., *Associate in Obstetrics and Gynecology*
- Roger O'Donnell, Jr., A.B., M.D., *Associate in Obstetrics and Gynecology*
- Clayton Howard Hixson, M.D., *Associate in Obstetrics and Gynecology*
- Henry John Russell McNitt, B.S. in Med., M.D., *Associate in Obstetrics and Gynecology*
- James Albert Dusbabek, M.D., *Associate in Obstetrics and Gynecology*
- Clarence Kendall Fraser, Ph.B., M.D., *Associate in Obstetrics and Gynecology*
- Barton Winters Richwine, M.D., *Associate in Obstetrics and Gynecology*
- Jeremiah Keith Cromer, M.D., *Associate in Obstetrics and Gynecology*
- Floyd Sterling Rogers, M.D., *Associate in Obstetrics and Gynecology*
- Rufus Martin Roll, A.B., M.D., *Associate in Obstetrics and Gynecology*
- Katherine Elizabeth Parker, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- William Dandridge Terrell, Jr., M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Julius Robert Epstein, M.D., *Clinical Instructor in Obstetrics and Gynecology*
- Morton Selwyn Kaufman, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*

- Caroline Jackson, A.M., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 William Thurston Lady, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Jed Williams Pearson, Jr., A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Samuel Hazen Shea, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Thomas Miles Leonard, Ph.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Albert Seymour Bright, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Shirley Sue Martin, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Neel Jack Price, B.S., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Roland Essig Bieren, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Alexander LeSueur Russell, M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Marvin Peace Footer, A.B., M.D., *Clinical Instructor in Obstetrics and Gynecology*
 Donald Walters, M.D., *Clinical Instructor in Obstetrics and Gynecology*

254 *Normal Obstetrics*

Lectures and demonstrations on the physiology and management of normal pregnancy. One hour a week. Fraser, Dolek

301-2 *Manikin Demonstrations*

The mechanism of labor and various types of operative delivery demonstrated to sections of the junior class in weekly sessions. Footer

337-38 *Abnormal Obstetrics*

Lectures and demonstrations on the complications of pregnancy. One hour a week. Parks, Nordlinger

343-44 *Gynecology*

Lectures and demonstrations on the principles of gynecology. One hour a week. Brown, Darner, Barter

441-42 *Clinical Obstetrics*

Senior students participate in prenatal and postnatal clinic care; observe the course of labor and deliver patients under supervision; attend biweekly departmental conferences and daily ward rounds in the University and Gallinger hospitals. Parks, Barter

443-44 *Clinical Gynecology*

Senior students observe and participate in the gynecological clinics and operating rooms of the University and Gallinger hospitals. Parks, Barter

OPHTHALMOLOGY

Ronald Atmore Cox, A.B., M.D., *Professor of Ophthalmology, Executive Officer*
 Ernest Alfred Watson Sheppard, M.D., C.M., *Clinical Professor of Ophthalmology*
 Richard Wallace Wilkinson, M.S. in Med., M.D., *Associate in Ophthalmology*
 Carmon Robert Naples, B.S., M.D., *Clinical Instructor in Ophthalmology*
 Walter Joseph Romejko, M.D., *Clinical Instructor in Ophthalmology*
 William Paxson Chalfant, Jr., M.D., *Clinical Instructor in Ophthalmology*
 William Joseph Graham Davis, A.B., M.D., *Clinical Instructor in Ophthalmology*
 Robert Edward duPrey, B.S., M.D., *Clinical Instructor in Ophthalmology*
 Robert Day, A.B., M.D., *Clinical Instructor in Ophthalmology*
 Jorge Guillermo Ramirez, B.S., M.D., *Clinical Instructor in Ophthalmology*

351-52 *Ophthalmology*

The Staff

A lecture course presenting the principles of ophthalmology, with special reference to topics of importance to the general practitioner. One hour a week for sixteen weeks.

447 *Clinic*

The Staff

During medical outpatient service, each student is given individual instruction in the ophthalmological aspects of systemic disease.

OTOLARYNGOLOGY

Daniel Bruce Moffett, A.B., M.D., *Professor of Otolaryngology, Executive Officer*

William Herndon Jenkins, M.D., *Clinical Professor Otolaryngology*

Aubrey David Fischer, M.D., *Associate in Otolaryngology*

Joel Norton Novick, M.S., M.D., *Clinical Instructor in Otolaryngology*

Homer King Vann, A.B., M.D., *Clinical Instructor in Otolaryngology*

Catharine Birch, A.B., M.D., *Clinical Instructor in Otolaryngology*

James Jerry McFarland, Jr., B.S., M.D., *Clinical Instructor in Otolaryngology*

Edward Clifford Jennings, B.S., M.D., *Clinical Instructor in Otolaryngology*

Aram Glorig, Jr., M.D., *Clinical Instructor in Otolaryngology*

Jack Louis Levine, M.D., *Clinical Instructor in Otolaryngology*

Morris Edward Krucoff, B.S., M.D., *Clinical Instructor in Otolaryngology*

451 *Otolaryngology*

Moffett, Jenkins

Lectures and demonstrations on anatomy, physiology, and diseases of the ear, nose, and throat. One hour a week.

454 *Bronchoscopy*

McFarland

A series of lectures on the fundamental principles and the use of instruments, including both the bronchoscope and esophagoscope. One hour a week for two weeks.

456 *Clinic*

The Staff

Practical clinical instruction in the diagnosis and treatment of diseases of the ear, nose, and throat. Gallinger Hospital. One and one-half hours once a week.

PATHOLOGY

Roger Morrison Choisser, B.S., M.D., *Professor of Pathology, Executive Officer*
 Thomas Martin Peery, A.B., M.D., *Professor of Pathology*
 Virgil Heath Cornell, M.D., Dr.P.H., *Professorial Lecturer in Pathology*
 Robert Pelley Hill, B.S., M.D., *Associate Professor of Pathology*
 Frank Nelson Miller, B.S., M.D., *Associate Professor of Pathology*
 Edward Clifford McGarry, A.B., M.D., *Clinical Instructor in Pathology*
 William John Schewe, B.S., M.D., *Clinical Instructor in Pathology*

SEMINAR LECTURERS

Elson Bowman Helwig, B.S., M.D., *Professorial Lecturer in Pathology*
 Hans Frank Smetana, M.D., *Professorial Lecturer in Pathology*
 Henry Rappaport, M.D., *Professorial Lecturer in Pathology*
 James Earle Ash, Jr., M.D., *Professorial Lecturer in Pathology*
 Elizabeth Mapelsden Ramsey, A.B., M.D., *Professorial Lecturer in Pathology*

259-60 *Pathology*

Choisser and Staff

Malformations, inflammations, degenerations, and neoplasms; special pathology of the organs and specific diseases. The laboratory work consists of the gross and microscopic study of diseased tissues. Necropsies are held regularly at the University and Gallinger hospitals.

307 *Necropsy (elective)*

The Staff

Students assist in the performance of necropsies. Fresh gross specimens and microscopic sections from each case are presented at weekly conferences. Current literature relating to cases is reviewed and presented by the students.

327-28 *Clinical Pathological Conference*

Choisser, Brown

Required in the third and fourth years. Case histories are presented and discussed by members of the staff and student body; necropsy and clinical findings are compared, and gross and microscopic specimens examined. One hour a week.

491-92 *Surgical Pathology*

Hill

One hour conference each week.

496 *Research (arr.)*

Choisser

Open to qualified nonmedical students. Time and credits to be arranged.

PEDIATRICS

- Preston Alexander McLendon, B.S., M.D., *Professor of Pediatrics, Executive Officer*
- Margaret Mary Nicholson, A.B., M.D., *Clinical Professor of Pediatrics*
- Edward Lewis, M.D., *Clinical Professor of Pediatrics*
- William Staton Anderson, A.B., M.D., *Clinical Professor of Pediatrics*
- Leroy Edward Hoeck, M.D., *Adjunct Clinical Professor of Pediatrics*
- John Phillip McGovern, B.S., M.D., *Assistant Professor of Pediatrics*
- Joseph Michael LoPresti, B.S., M.D., *Assistant Professor of Pediatrics*
- Mabel Harlakenden Grosvenor, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- John Augustine Washington, B.S., M.D., *Assistant Clinical Professor of Pediatrics*
- Aaron Nimetz, A.B., M.D., *Assistant Clinical Professor of Pediatrics*
- Dorothy Steinle Jaeger-Lee, M.D., *Assistant Clinical Professor of Pediatrics*
- George Maksim, M.D., M.S. in Ped., *Assistant Clinical Professor of Pediatrics*
- Reginald Spencer Lourie, M.D., *Assistant Clinical Professor of Pediatrics Psychiatry*
- Samuel Paul Bessman, M.D., *Assistant Clinical Professor of Pediatrics*
- William Allen Howard, A.B., M.D., *Associate in Pediatrics*
- John Howell Peacock, B.S., M.D., *Associate in Pediatrics*
- Maynard Irving Cohen, A.B., M.D., *Associate in Pediatrics*
- Mary Katherine Laurence Sartwell, A.B., M.D., *Associate in Pediatrics*
- Herbert Harold Diamond, M.D., *Clinical Instructor in Pediatrics*
- Reginald Henry Mitchell, M.D., *Clinical Instructor in Pediatrics*
- Charles Frederick Stiegler, A.B., M.D., *Clinical Instructor in Pediatrics*
- Hugh Gambel Clark, A.B., M.D., *Clinical Instructor in Pediatrics*
- Adrian Recinos, Jr., B.S., M.D., *Clinical Instructor in Pediatrics*
- Allan Bertram Coleman, M.D., *Clinical Instructor in Pediatrics*
- Bennett Olshaker, A.B., M.D., *Clinical Instructor in Pediatrics*
- Robert Orr Warthen, M.D., *Clinical Instructor in Pediatrics*
- Emily Annabelle Black, B.S., M.D., *Clinical Instructor in Pediatrics*
- Robert Harper Anderson, M.D., *Clinical Instructor in Pediatrics*
- Warren Godfrey Preisser, A.B., M.D., *Clinical Instructor in Pediatrics*
- Robert Edward Martin, M.D., *Clinical Instructor in Pediatrics*
- Muriel Schatz Sowers, A.B., M.D., *Clinical Instructor in Pediatrics*
- Richard Charles Webb, B.S., M.D., *Clinical Instructor in Pediatrics Psychiatry*
- William Stark, A.B., M.D., *Clinical Instructor in Pediatrics Psychiatry*
- David Arthur St. Martin, M.D., *Fellow in Pediatrics*
- Robert Browning Sullivan, A.B., M.D., *Fellow in Pediatrics Psychiatry*

- 256 *Pediatrics* McLendon and Staff
Lectures on physiology of the newborn, development, infant nutrition, diseases of the newborn, common anomalies and system illnesses of infancy and childhood. Medical School. Two hours a week.
- 357-58 *Clinical Clerkship—General Pediatrics* Nicholson, McGovern, and Staff
Introduction to Clinical pediatrics. Emphasis on bedside discussion and group seminars including the newborn. Ward rounds. Gallinger Hospital. Five students in rotation, two weeks.
- 359-60 *Clinical Clerkship—Contagious Diseases* McGovern and Staff
Conferences and bedside discussion in contagious and infectious diseases. Prevention and quarantine measures. Gallinger Hospital. Five students in rotation, two weeks.
- 361-62 *Clinical Conference* McLendon, McGovern, and Staff
Required in third year. Presentation and discussion by students of current patient problems. Gallinger Hospital. One hour a week.
- 457-58 *Clinical Clerkship* Anderson, LoPresti, and Staff
Full time, including assignment to night and holiday admissions. Case studies on wards under direct Resident supervision. Ward rounds with Staff and Residents. Childrens Hospital. Twelve students, six weeks.
- 363-64 *Ward Rounds* Nicholson, McGovern, Maksim and Staff
Bi-weekly ward rounds, with students and Resident Staff. Gallinger Hospital.
- 465-66 *Psychiatry* Lourie and Staff
Lectures on normal behavior and emotional development. Clinical case analysis. Second, third, and fourth years.
- 459-60 *Outpatient Clinics* LoPresti and Staff
Work in Medical and Specialty clinics including surgery, allergy, X-ray, child welfare, cardiology, dermatology, neurology, and child guidance. Childrens Hospital.
- 461-62 *Clinical-pathological Conference* McLendon, Anderson, LoPresti, Washington
Clinical and pathological discussion of recent patient history and laboratory data. Childrens Hospital. Once a week.
- 463-64 *Section Conferences* Anderson, LoPresti, and Staff
Discussion of clinical problems of diagnosis and treatment of current patients. Childrens Hospital. Twice a week.
- 465 *Clinical Conference II* McLendon, LoPresti, and Staff
Required in the fourth year. Case presentation by fourth-year students. Staff and student discussion of diagnosis and management. Medical School. One hour a week.
- 466 *Child Guidance and Development* Jeager-Lee, Lourie
Lectures to second year class. Clerkship in fourth year including Well Baby Clinic. Group and class conferences.

PHARMACOLOGY

Paul Kenneth Smith, Ph.D., *Professor of Pharmacology, Executive Officer*

Bernard Beryl Brodie, Ph.D., *Professorial Lecturer in Pharmacology*

Harold George Mandel, Ph.D., *Associate Professor of Pharmacology*

*Edward Lewis Alpen, Ph.D., *Assistant Professor of Pharmacology*

Pierre Emmanuel Carlo, Ph.D., *Assistant Professor of Pharmacology*

Harriet Mylander Maling, Ph.D., *Assistant Research Professor of Pharmacology*

Elizabeth Potts Anderson, Ph.D., *Assistant Research Professor of Pharmacology*

Moreshwar Vithal Nadkarni, Ph.D., *American Cancer Society Fellow*

Gloria Marie Comulado, M.S., *Research Fellow in Pharmacology*

Gaylord Maurice Conzelman, B.S., *Fellow in Pharmacology*

Patricia Elly, A.M., *Research Fellow in Chemotherapy*

Charlotte Rebecca Hess, A.M., *Research Fellow in Chemotherapy*

Kenneth Kaname Takemoto, M.S., *Research Fellow in Chemotherapy*

James Leong Way, A.B., *Baxter Research Fellow in Pharmacology*

Helen Chiang-ying Yen, M.S., *Research Fellow in Pharmacology*

261 Pharmacology (5)

Lectures and conferences concerning the interaction of drugs and biological systems as a basis for the rational therapy of disease. Open to qualified nonmedical students. Five hours a week. The Staff

263 Pharmacology Laboratory (2)

Laboratory instruction and demonstrations designed to complement the above course. Open to qualified nonmedical students. Five hours a week. The Staff

265 Chemotherapy (1)

Five lectures a week for three weeks. For graduate students. Time to be arranged. The Staff

267-68 Pharmacological Research (arr.)

Primarily for those properly qualified graduate and medical students seeking careers in pharmacology. Hours and credits to be arranged. The Staff

269-70 Pharmacology Seminar (1-1)

Recent advances in pharmacology. For those interested in pharmacological research. Open to qualified nonmedical students. Two hours a week. The Staff

* On national service leave.

280 *Special Methods in Research* (arr.)

The Staff

A course to familiarize the student with advanced chemical and physiological methods employed in pharmacological investigations. Open to qualified nonmedical students. Hours and credits to be arranged.

299-300 *Thesis* (3-3)

The Staff

Required of Master of Arts and Master of Science candidates.

339-40 *Therapeutic*

Staff of Pharmacology and Medicine

Conferences I

Conferences designed to emphasize the application of pharmacological principles to the problems of clinical medicine. One hour a week.

PHYSICAL MEDICINE AND REHABILITATION

Charles Samuel Wise, B.S., M.D., *Professor of Physical Medicine and Rehabilitation, Executive Officer*

Josephine Jordan Buchanan, A.M., M.D., *Assistant Clinical Professor of Physical Medicine and Rehabilitation*

Alvin Knudson, B.S., M.D., *Associate in Physical Medicine and Rehabilitation*

John Herman Kuitert, A.B., M.D., *Associate in Physical Medicine and Rehabilitation*

Jasper Wayne McFarland, B.S., M.D., *Clinical Instructor in Physical Medicine and Rehabilitation*

Helen Eileen Weber, B.S., R.P.T., *Assistant in Physical Medicine and Rehabilitation*

Sally Hale, B.S., R.P.T., *Assistant in Physical Medicine and Rehabilitation*

Charles Jerome Everding, B.S., M.D., *Fellow in Physical Medicine and Rehabilitation*

150 *Elements of Physical Medicine*

In arrangement with the Anatomy Department, lectures and demonstrations of the various tests and measurements are employed in the evaluation of physical disability. Emphasis is placed on normal and abnormal peripheral nerve testing (electrodiagnosis), muscle testing, joint range, and other physical disability measurements. The Staff

351-52 *Advanced Physical Medicine*

Lectures and demonstrations concerning the various techniques, clinical applications of physical medicine and rehabilitation to be integrated with the teaching of the associated medical and surgical specialties. The Staff

467-68 *Clinical Studies*

Clinical teaching and demonstration at the University Hospital. The Staff

485 *Research (arr.)*

Open to medical students and qualified nonmedical students. and credits to be arranged. The Staff
Time

PHYSIOLOGY

Errett Cyril Albritton, A.B., M.D., *Fry Professor of Physiology*
 Chester Elwood Leese, Ph.D., *Professor of Physiology, Executive Officer*
 Joseph William Still, M.D., M.P.H., *Assistant Professor of Physiology*
 Hyman Erwin Steinman, M.D., *Lecturer in Physiology*
 Katherine Virginia Greene, A.M., *Instructor in Physiology*
 Charles Arthur Toompas, A.M., *Instructor in Physiology*
 Louis Patrick Munan, M.S., *Associate in Physiology*
 William Spector, A.M., *Associate in Physiology*
 Edward Elias Gahres, M.S., *Fellow in Physiology*

115 *Physiology* (3) Leese

Lectures for nonmedical students covering the fundamentals of physiology in its various subdivisions. Prerequisite: one year of general science or one term of a biological science. Section A: Tues. and Thurs., 8:45 to 10 A.M.; section B: Tues. and Thurs., 5:10 to 6:25 P.M.

117 *Experimental Physiology* (1) Greene and Staff

Laboratory exercises in the fundamentals of physiology, for nonmedical students. Prerequisite or concurrent registration: Physiology 115 or the equivalent. Material fee, \$15. Sat., 9:10 to 12 A.M.

130 *Physiology of Endocrine Activity* (2) Albritton, Munan

For nonmedical students. The circulatory, metabolic, reproductive, growth, and other adaptations, immediate and long term, accompanying and affecting endocrine activity. Prerequisite: Physiology 115 or the equivalent. Tues. and Thurs., 6:10 P.M.

130 *The Psycho-physiology of Personality* (2) Leese

For nonmedical students. Lectures on the genesis and expression of personality, with emphasis on the physiological approach. Prerequisite: Physiology 115 or the equivalent and general psychology. Tues. and Thurs., 5:10 P.M.

150 *Advanced Physiology* The Staff

One hundred twenty-five physiological lectures and one hundred twenty-five laboratory hours devoted to the major divisions of the subject. For medical students.

201-2 *Experimental Method* (I-I) Albritton

For nonmedical graduate students. Design of controlled experiments in medical or biological investigation; errors in design; criticism and judgment of evidence; and tests of the statistical significance of experimental results. Sat., 9:00 A.M.

Physiology 201X, same as 201, offered spring term.

211-12 *Problems in Physiology* (arr.) The Staff

For nonmedical graduate students. Open to undergraduate students with the approval of the Department. Prerequisite: Physiology 115 and 117, or the equivalent. Time and credits to be arranged.

- 221-22 *Physiology Seminar (1-1)* The Staff
 For nonmedical students undertaking graduate work in physiology.
 Prerequisite: Physiology 115 and 117, or the equivalent. Weekly
 throughout the year.
- 231 *Advanced Physiology of Circulation and Respiration (4)* Albritton, Leese, and Staff
 For nonmedical graduate students. Lectures on blood, heart, circulation, tissue water, respiration, and acid-base balance. Four hours a week, to be arranged.
- 234 *Advanced Physiology of Nutrition, Metabolism, and Excretion (2)* Leese, Still, Steinman
 For nonmedical graduate students. Lectures on nutrition, digestion, metabolism, excretion, and temperature regulation. Two hours a week, to be arranged.
- 236 *Advanced Physiology of the Endocrine Glands and Reproduction (1)* Albritton, Still, and Staff
 For nonmedical graduate students. Lectures on ductless glands, hormones, humoral agents, and reproduction. One hour a week, to be arranged.
- 238 *Advanced Physiology of the Neuro-Muscular System (2)* Leese
 For nonmedical graduate students. Lectures on sensory reception, central nervous processes, somatic and visceral motor activity, and the behavior of smooth and striped muscle. Two hours a week, to be arranged.
- 240 *Advanced Experimental Physiology (3)* The Staff
 For nonmedical graduate students. Laboratory work only. Correlated with the lectures in courses 231-238. Material fee, \$36. Nine hours a week, to be arranged.
- 295-96 *Research (arr.)* Albritton, Leese, and Staff
 Material fee, \$12 a credit hour. Time and credits to be arranged.
- 299-300 *Thesis (3-3)* Albritton, Leese

PSYCHIATRY

Winfred Overholser, A.B., M.D., Sc.D., *Professor of Psychiatry, Executive Officer*

Roscoe Willis Hall, Ph.B., M.D., *Clinical Professor of Psychiatry*

Solomon Katzenbogen, M.D., *Clinical Professor of Psychiatry*

Addison McGuire Duval, M.D., *Clinical Professor of Psychiatry*

Sidney Berman, B.S., M.D., *Assistant Clinical Professor of Psychiatry*

Morris Kleinermann, Ch.D., M.B., *Assistant Clinical Professor of Psychiatry*

Leon Yochelson, A.B., M.D., *Assistant Clinical Professor of Psychiatry*

Henry Prather Laughlin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*

Marshall de Graffenried Ruffin, B.S., M.D., *Assistant Clinical Professor of Psychiatry*

Harriet Elizabeth Twombly, A.B., M.D., *Associate in Psychiatry*

Norman Taub, B.S., M.D., *Associate in Psychiatry*

William Green Cushard, M.D., *Associate in Psychiatry*

Harold Corson, M.D., *Associate in Psychiatry*

David Eden, A.B., M.D., *Clinical Instructor in Psychiatry*

Clarence Bunge, B.S., M.D., *Clinical Instructor in Psychiatry*

Robert Milton Greenberg, A.B., M.D., *Clinical Instructor in Psychiatry*

John Joseph Blasko, B.S., M.D., *Clinical Instructor in Psychiatry*

Helen Pallister, Ph.D., *Clinical Psychologist*

165 *Dynamics of Personality Development* Berman

An orientation course in the anatomical, physiological, and psychological growth and development of personality. Consideration of characteristics of structure, function, and development of the psyche leading to normal behavior as a basis for the study of the pathological. Evaluation of interpersonal relationships. One hour a week.

178 *Psychopathology* Hall

Manifestations and understanding of various mental mechanisms and abnormal reaction-types, preceded by history of development of psychopathology and illustrated with case material. One hour a week.

266 *Psychiatry* Overholser

History, etiology, symptoms, course, and treatment of the major psychoses with emphasis on the dynamics involving the person as a whole. One hour a week.

268 *Demonstration Clinics* Twombly, Cushard

Presentation of clinical cases of major mental illnesses and primary behavior disturbances, correlating with Psychiatry 266. Each student examines patients under supervision. Three hours a week. St. Elizabeths Hospital.

- 271 *Psychosomatic Aspects of General Medicine* Katzenelbogen
Somatic disorders of psychogenic origin. The role of personality reactions in functional and organic disorders. One hour a week.
- 324 *Psychoneurosis* Laughlin
Etiology, psychopathology, clinical aspects, and treatment of various types of psychoneuroses. One hour a week. Medical Conference Room. Gallinger Hospital.
- 431-32 *Clinical Clerkship* Duval, Kleinerman, Yochelson, Ruffin, Taub, Corson, Pallister, Eden, Bunge, Greenberg
Supervised examination, diagnosis, and treatment of ambulatory borderline cases in University Hospital and hospitalized cases in St. Elizabeths Hospital. Conferences for discussion of cases. Clinical application of psychiatric principles to general medical practice is stressed. Three weeks divided service. University Hospital Inpatient and Outpatient Psychiatric clinics and St. Elizabeths Hospital.

RADIOLOGY

William Woodrow Stanbro, M.D., *Professor of Radiology, Executive Officer*
 Solomon Rodney Bersack, B.S., M.D., *Assistant Clinical Professor of Radiology*
 Ludwig Carl Kroutil, A.B., M.D., *Assistant Clinical Professor of Radiology*
 Charlotte Patricia Donlan, A.B., M.D., *Assistant Clinical Professor of Radiology*
 Elmer Richard King, A.B., M.D., *Associate in Radiology*
 Luther Weldon Brady, M.D., *Associate in Radiology*
 George Tievsky, M.D., *Clinical Instructor in Radiology*
 Uthai Vincent Wilcox II, M.D., *Clinical Instructor in Radiology*
 Alvin Charles Wyman, A.B., M.D., *Clinical Instructor in Radiology*
 Scott Winfield Smith, Ph.D., *Physicist*

358 *Advanced Radiological Diagnosis* The Staff
 Lectures and discussions.

449 *Clinical Studies* The Staff
 Students assigned in rotation on a full-time basis for a specific period to the X-ray Department.

478 *Research* The Staff
 Hours to be arranged.

SURGERY

- Brian Blades, A.B., M.D., *Professor of Surgery, Executive Officer*
 Daniel LeRay Borden, A.M., M.D., *Clinical Professor of Surgery*
 Paul Stirling Putzki, M.D., *Clinical Professor of Surgery*
 Arch Lockhart Riddick, B.S., M.D., *Clinical Professor of Surgery*
 John Hugh Lyons, M.S., M.D., *Clinical Professor of Surgery*
 John Gordon Lee, A.B., M.D., C.M., Med. Sc.D., *Adjunct Clinical Professor of Surgery*
 Sam Foster Seeley, B.S., B.M., M.D., *Adjunct Clinical Professor of Surgery*
 Wallace Harry Graham, B.S., M.D., *Professorial Lecturer in Surgery*
 Russell Kuhner Hollingsworth, M.S., M.D., *Professorial Lecturer in Surgery*
 Herbert Hermann Schoenfeld, M.D., *Associate Clinical Professor of Surgery*
 Alec Horwitz, M.S., M.D., *Associate Clinical Professor of Surgery*
 William Stanley McCune, A.B., M.D., *Associate Clinical Professor of Surgery*
 Benjamin Franklin Dean, Jr., M.S., M.D., *Assistant Clinical Professor of Surgery*
 Carl Berg, M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Calvin Trexler Klopp, A.B., M.D., *Assistant Clinical Professor of Surgery*
 Julius Salem Neviaser, A.B., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Jerome Blaine Harrell, M.D., *Assistant Clinical Professor of Surgery*
 Leonard Theodore Peterson, B.S., M.D., *Assistant Clinical Professor of Orthopedic Surgery*
 Walter Henry Gerwig, Jr., A.B., M.D., *Assistant Clinical Professor of Surgery*
 Vincent Michael Iovine, B.S., M.D., *Assistant Clinical Professor of Surgery*
 Richard Knight Thompson, D.D.S., *Associate in Dental Surgery*
 William Ross Morris, M.D., *Associate in Surgery*
 Jacob Joseph Weinstein, B.S., Phar.G., M.D., *Associate in Surgery*
 William Carey Meloy, M.D., M.S. in Med., *Associate in Surgery*
 Edward Alexander Cafritz, M.D., *Associate in Surgery*
 Karl Hayden Wood, Phar.G., D.D.S., *Associate in Dental Surgery*
 James Leo Kelley, A.B., M.D., *Instructor in Surgery*
 Robert George McCorkle, Jr., B.S., M.D., *Instructor in Surgery*

- Crenshaw Douglas Briggs, B.S., M.D., *Clinical Instructor in Surgery*
 Joseph Francis Conlon, D.D.S., *Clinical Instructor in Dental Surgery*
 Duane Case Richtmeyer, A.B., M.D., *Clinical Instructor in Surgery*
 *Richard Lee Jackson, M.D., *Clinical Instructor in Surgery*
 Leon Gerber, M.D., *Clinical Instructor in Surgery*
 Thomas Bradley, A.B., M.D., *Clinical Instructor in Surgery*
 Ernest Alva Gould, B.S., M.D., *Clinical Instructor in Surgery*
 Austin Bertram Rohrbaugh, Jr., M.D., *Clinical Instructor in Orthopedic Surgery*
 Marvin Hayne Kendrick, A.B., M.D., *Clinical Instructor in Surgery*
 Brooks Gideon Brown, B.S., M.D., *Clinical Instructor in Surgery*
 Gordon Sparks Letterman, B.S., M.D., *Clinical Instructor in Surgery*
 Lois Irene Platt, A.B., M.D., *Clinical Instructor in Surgery (Cancer Cytology)*
 John Decator Hoyle, B.S., M.D., *Clinical Instructor in Surgery*
 Henry Leon Feffer, A.B., M.D., *Clinical Instructor in Orthopedic Surgery*
 Robert Roland Smith, B.S., M.D., *Clinical Instructor in Surgery*
 John Sugden Paul, B.S., M.D., *Clinical Instructor in Surgery*
 Howard Clementh Pierpont, A.B., M.D., *Clinical Instructor in Surgery*
 Daniel Joseph Radecki, M.D., *Fellow in Surgery*
 Joseph Lee Sedwitz, M.D., *Fellow in Surgery*
 Carlo Anfossi, M.D., *Fulbright Fellow in Thoracic Surgery*

101-2 *Surgical Anatomy* Surgery and Anatomy Staffs
 Entire first-year class. Clinics illustrating relationship between gross anatomy and clinical surgery. University Hospital. One hour every two weeks.

280 *Introduction to Surgery* The Staff
 One hour twice a week. Lectures and recitations covering the field of general surgery.

284 *Surgical Physiology* The Staff
 A clinical and laboratory course with particular emphasis on applied Physiology. Two hours a week.

373-74 *Clinical Clerkship I* The Staff
 The student is assigned and required to work up thoroughly the cases for diagnosis and treatment. Gallinger Hospital.

375-76 *Outpatient Surgical Clinic* The Staff
 Surgical clinic. Gallinger Hospital. Forty hours.

377-78 *Orthopedics I* The Staff
 Weekly orthopedic lecture, Gallinger Hospital; weekly seven and one-half hour ward rounds. Gallinger Hospital.

* On national service leave.

379-80 *Surgical Staff Conference I*
Tuesday at Gallinger Hospital.

383-84 *Surgical Clinic I*
Demonstration of various surgical diseases to the entire third-year class. One hour a week.

473-74 *Clinical Clerkships II*
University Hospital, six weeks. Mt. Alto or Emergency Hospital, three weeks.

479-80 *Surgical Staff Conference II*
Wednesday at the University Hospital.

483-84 *Surgical Ward Rounds*
Demonstration of various surgical diseases to fourth-year clerks. University Hospital. One hour a week.

491-92 *Surgical Pathology II*
One hour conferences each week.

493-94 *Surgical Anatomy*
Lectures for fourth-year clerks. University Hospital. One hour a week for twelve weeks.

497-98 *Surgical Clinic*
Conferences for fourth-year clerks assigned to the University Hospital. Walter Reed Hospital. Two hours a week.

UROLOGY

Frederick A. Reuter, M.D., *Professor of Urology, Executive Officer*
 Thomas Carlton Thompson, B.S., M.D., *Clinical Professor of Urology*
 Gilbert Ottenberg, A.M., M.D., *Associate in Urology*
 William Dabney Jarman, B.S., M.D., *Associate in Urology*
 Edward Egner Ferguson, M.D., *Associate in Urology*
 Leon Richard Culbertson, B.S., M.D., *Associate in Urology*
 Gordon Rhodes MacDonald, B.S., M.D., *Clinical Instructor in Urology*
 Herbert DeGrange Wolff, Jr., M.D., *Clinical Instructor in Urology*
 Frederick Turner Reuter, M.D., *Clinical Instructor in Urology*

395-96 Clinics

The Staff

Clinical teaching and demonstrations on the care of urological cases with special emphasis on the pre- and post-operative management. Operative clinics and clinical teaching. Gallinger Hospital.

491-92 Urology

Reuter and Staff

Lectures covering the entire field of urology including diagnosis, treatment, and morbid pathology. One hour a week.

495-96 Clinics

Reuter and Staff

Clinical demonstrations, teaching in the Outpatient Department, and urological X-ray conferences, with special attention given to diagnostic procedures. University Hospital. One part of each section three hours a week.

DEGREES CONFERRED

DOCTOR OF MEDICINE

MAY 28, 1952

Robert Alexander Barnett	Md.	Abraham Isaac Gimble	D.C.
A.B. 1949, The George Washington University		B.S. 1943, M.S. 1948, The George Washington University	D.C.
Bruce Ben Bellomy	Va.	Gloria Swanson Godbey	Va.
Roger Heaner Bergstrom	Md.	A.B. 1949, The George Washington University	
Thales Bowen, Jr.	D.C.	James Kirke Gordon	D.C.
A.B. 1949, The George Washington University		A.B. 1949, The George Washington University	
Neal Caldwell Brady	Calif.	William Oliver Green, Jr.	Ohio
B.S. 1947, Western Reserve University		A.B. 1949, The George Washington University	
Robert James Brennan	Va.	William August Hagen, Jr.	N.J.
A.B. 1949, The George Washington University		A.B. 1948, Hiram College	
Robert George Brewer	Md.	Allan Hall	
A.B. 1948, Hamilton College		(With distinction)	
George Lafayette Carr	Ga.	A.B. 1949, The George Washington University	D.C.
Philip Clinkston	Mich.	Gregory Thomas Henesy	N.M.
B.S. 1942, University of Michigan		A.B. 1949, The George Washington University	N.Y.
M.S. 1948, The George Washington University		Charles Eldon Higbee	D.C.
Fenwick Earl Cole	Fla.	Doris Marcelle Honig	
Michael Anthony Corrado	Md.	A.B. 1944, Hunter College	
A.B. 1949, The George Washington University		Richard Edwin Hunton	
Leonard Joel Corwin	N.J.	(With distinction)	
B.S. 1947, Rutgers University		A.B. 1949, The George Washington University	N.C.
Raymond Laverne Coultrip, Jr.	D.C.	Harvey Wylie Johnston	D.C.
Thomas McLellan Davis, Jr.	D.C.	B.S. 1949, University of North Carolina	
A.B. 1949, The George Washington University		Horace Eskew Kerr	Md.
John Benedict Doyle, Jr.	Calif.	A.B. 1949, The George Washington University	
A.B. 1948, University of California at Los Angeles		Francis Carlyle Kirchner	Va.
Harold Norris Eccleston, Jr.	Md.	B.S. 1948, The George Washington University	
Wilfred Russell Ehrmantraut	Md.	Robert Duane Knapp, Jr.	Maine
B.S. 1948, University of Maryland		A.B. 1948, The George Washington University	Mich.
David Eilenberg	N.J.	Paul Raymond Mayberry	N.J.
A.B. 1948, The George Washington University		John Cleland Mayne	
Harry Hughes Ennis	Utah	A.B. 1948, Albion College	
A.B. 1948, Brigham Young University		John Harbeck Meeker, Jr.	N.C.
Clarence Edward Everhart, Jr.	Ohio	A.B. 1949, Drew University	
B.S. 1948, Western Reserve University		Arthur Donald Merritt	Minn.
Boyd Joseph Farr	Utah	A.B. 1949, The George Washington University	
Jesse Alan Federle	Nebr.	Kirk Oliver Metzgerott	Va.
A.B. 1949, The George Washington University		A.B. 1948, The George Washington University	
Robert Ferree Feltman	Va.	Maurine Myles Miller	Pt.
(With distinction)		A.B. 1948, The George Washington University	
A.B. 1949, The George Washington University		John George Monyak	Mont.
Donald Joseph Fernbach	N.Y.	B.S. 1949, Geneva College	Minn.
A.B. 1948, Tusculum College		Charles Calvin Morledge	Md.
Milton Arlo Foor	Calif.	Oliver Adolph Muhonen	
A.B. 1947, University of Southern California		John Peter Nasou	
Freddie Patrick Gargano	N.J.	A.B. 1947, University of Minnesota	
(With distinction)			
B.S. 1947, The George Washington University			

George D. Oakley A.B. 1945, University of Hawaii	Hawaii	Anson Hutchinson Stage Robert William Stahl A.B. 1948, Gettysburg College	Va. Pa.
Henry Walter Pemberton A.B. 1947, Amherst College	Minn.	James Henry Staling A.B. 1948, Duke University	D.C.
Leontine Vince Phillips A.B. 1949, The George Washington University	D.C.	Harry Clay Stamey A.B. 1948, The George Washington University	Pa.
Wooden Harold Pickering A.B. 1950, Ohio State University	Ohio	Allan Hugh Stewart James Arthur Stokes	Calif. Fla.
Donald Kaye Pine A.B. 1949, The George Washington University	Va.	Charles Albert Stamp (With distinction)	W.Va.
John Samuel Piver B.S. 1948, The George Washington University	D.C.	A.B. 1948, University of Pennsylvania	Pa.
Ray Earl Pinyner B.S. 1948, Pennsylvania State College	Pa.	Paul Augustus Thomas, Jr. B.S. 1948, The George Washington University	Pa.
Stanley Eugene Potter B.S. 1948, The George Washington University	W.Va.	Elijah White Titus Richard Carlton Tripp	D.C. Iowa
Raymond Edward Rupp, Jr. B.S. 1948, The George Washington University	D.C.	A.B. 1947, University of Iowa John Bernard Umbas, Jr.	D.C.
Marion Stanley Rosenthal A.B. 1949, The George Washington University	D.C.	A.B. 1949, The George Washington University	Pa.
Frank Joseph Rowe B.S. 1948, Princeton University	N.J.	Howard Robert Unger (With distinction)	Pa.
Carl H. Sawyer A.B. 1948, Princeton University	D.C.	A.B. 1949, The George Washington University	Pa.
Carlisle Earl Sansum A.B. 1947, University of California	Calif.	Charles George Vivian, Jr. Richard Dean Walden	Wyo. S.D.
Andrew Garfield Seche B.S. 1949, University of North Dakota	N.D.	A.B. 1948, University of South Dakota	S.D.
Thomas Arthur Schultz B.S. 1949, Capital University	N.Y.	Marc Lee West B.S. 1948, The George Washington University	D.C.
Frederick Herman Shipkey, Jr. B.S. 1948, University of Nebraska	Nebr.	David Colwell Wherry A.B. 1948, The George Washington University	Nebr.
Samuel Melvin Slobodkin B.S. 1948, The George Washington University	D.C.	Roger Donald Whitehead Francis deSales Woodruff	Calif. D.C.
Robert Ross Lowell A.B. 1948, Denver University	Wyo.	B.S. 1945, Harvard University	D.C.

STUDENTS REGISTERED IN THE SCHOOL OF MEDICINE

1952-53

A			
Aaronson, Charles Martin (II)	D.C.	Boles, Roger (I)	Calif.
A.B. 1952, The George Washington University		A.B. 1949, Stanford University	Calif.
Albert, Harold Franklin (III)	Pa.	Boone, Aretas Cephas (III)	Ob.
B.S. 1950, Muhlenberg College		A.B. 1950, Stanford University	Ob.
Anderson, Donald Kinnear (I)	Ohio	Boyd, Milton Alexander (III)	D.C.
A.B. 1952, Yale University		B.S. 1950, State College of Washington	D.C.
Applegate, David Carl (III)	Calif.	Brodie, Dorothy Ray (IV)	Pa.
A.B. 1950, University of California		B.S. 1949, The George Washington University	Pa.
Armstrong, Richard Merrill (III)	Idaho	Brown, Charles Harmon (I)	Va.
B.S. 1950, University of Idaho		A.B. 1952, Latahette College	Va.
Ashworth, Charles Raymond (IV)	Idaho	Bullock, Robert Graham (III)	Calif.
Auerbach, Jack (I)	Idaho	A.B. 1950, Johns Hopkins University	Calif.
Austin, James Albert (I)	D.C.	Burns, Latahette Ernest (II)	Ma.
A.B. 1952, University of Southern California	Ariz.	B.S. 1951, University of California	Ma.
		Burles, Bruce, Jr. (II)	Ob.
		B.S. 1951, Franklin and Marshall College	Ob.
		Butrey, Charles (III)	D.C.
		B.S. 1950, Western Reserve University	D.C.
B		C	
Bacchus, Habeeb (III)	D.C.	Cahan, Jules Isaac (IV)	Pa.
B.S. 1947, Howard University		B.S. 1949, The George Washington University	Pa.
M.S. 1948, Ph.D. 1950, The George Washington University		Calvert, Francis Nelson (II)	N.Y.
Bahr, Robert Dennis (III)	Va.	A.B. 1951, Howard College	N.Y.
B.S. 1950, University of Wisconsin		Cantel, Jeanine Wolf (II)	D.C.
Baker, Gordon (II)	N.J.	Cantrell, Joe Randie (II)	D.C.
Bali, Carl Eugene (IV)	Fla.	Carlson, Paul Earle (I)	Id.
A.B. 1951, The George Washington University		A.B. 1951, Stanford University	Id.
Banning, Bruce Cramer (I)	Md.	Carlton, Harry Nelson (III)	Pa.
B.S. 1952, Georgetown University		B.S. 1949, M.S. 1950, The George Washington University	Pa.
Baratta, Michael Vincent (IV)	N.Y.	Carter, Thomas Nelson (II)	D.C.
B.S. 1949, Columbia University		B.S. 1951, American University	D.C.
Barga, Jack Lee (I)	Ohio	Chaney, James William (III)	Pa.
Barkin, Gilbert Donald (IV)	D.C.	A.B. 1949, Catholic University of America	Pa.
B.S. 1949, The George Washington University		M.S. 1950, The George Washington University	Pa.
Barr, Solomon Efrem (III)	D.C.	Chapman, John Timothy (II)	Pa.
A.B. 1951, The George Washington University		Chesvack, William Aloysius (II)	Pa.
Barranco, Frank Thomas (I)	Md.	Ciereloe, Albert (I)	Pa.
A.B. 1952, Duke University		A.B. 1952, Washington and Jefferson College	Pa.
Bashore, Richard Albert (II)	D.C.	Cobb, Leonard Cowgill (IV)	Pa.
A.B. 1951, University of California		B.S. 1949, University of Washington	Pa.
Beary, Franklin David (II)	Va.	Cock, Thomas Charles (II)	Pa.
B.S. in F.F. 1943, D.C. University		A.B. 1952, The George Washington University	Pa.
Behrens, Charles Donald (II)	Mon.	Coffey, Hubert Franklin (IV)	Pa.
A.B. 1950, Montana State University		Coffey, Robert Tuttle (IV)	Pa.
Bernstein, Miriam Hannah (IV)	N.Y.	B.S. 1948, Wake Forest College	Pa.
A.B. 1949, Mt. Holyoke College		Cohen, Melvin S. (IV)	Pa.
Blackwelder, Theodore Foster (I)	Md.	A.B. 1948, Brooklyn College	Pa.
B.S. 1952, Roanoke College		B.S. 1949, The George Washington University	Pa.
Bloom, Joseph (III)	R.I.	Coleman, Priskopes (III)	Pa.
A.B. 1949, Brown University		A.B. 1951, The George Washington University	Pa.
Blue, Mary Alice (IV)	N.C.		
A.B. 1948, University of North Carolina			
Blum, Fred G., Jr. (III)	Wis.		
B.S. 1950, University of Wisconsin			

Calif. Raymond Eugene (II) A.B. 1950, University of California	Va.	Duggins, Virginia Anne (II) A.B. 1942, Sweet Briar College	Va.
Conn. Kenneth Claude (II) A.B. 1952, University of Denver	Colo.	A.M. 1951, The George Washington University	
Calif. Harvey Badeau (II) A.B. 1951, Ohio Wesleyan University	D.C.	Dyer, Robert Francis (II) A.B. 1951, University of Michigan	D.C.
Conn. Ray Bradford, Jr. (IV) A.B. 1949, East Carolina Teachers College	Va. Md.	E	
Conn. David (I) Conn. Bennett Monroe (I)	Wash. Md.	Eauet, Lawrence Joseph (I) A.B. 1952, Harvard University	D.C.
Conn. Frank John (II) A.B. 1950, San Diego State College	Calif.	Exbert, William Richard (I) B.S. 1952, Brigham Young University	Idaho
Conn. Paul, Jr. (IV) A.B. 1949, Villanova College	Puerto Rico	Ekman, Donald Quentin (III) Edington, William Thomas (I)	Md. N.C.
Conn. Maurice Clyde (I) Conn. Robert Herman (III)	Calif. Idaho	A.B. 1952, Duke University Ellis, George Joseph, Jr. (I)	Md.
Conn. James New (I) Conn. John David (II)	N.Y. D.C.	A.B. 1952, Catholic University of America	
Conn. The George Washington University Conn. John Rush (II)	D.C. Md.	Endres, Richard John (II) A.B. 1950, University of Washington	D.C.
D		Epstein, Jerome Harold (IV) A.B. 1947, New York University	D.C.
Laurel, Henry Warren (I) A.B. 1950, Yankton College	Ill.	A.M. 1948, The George Washington University	
Laurel, James Arthur (III) A.B. 1950, University of Dayton	Ohio	Erkenbeck, Richard Vernon (I) B.S. 1952, University of Maryland	Md.
Laurel, David Stanley (IV) A.B. 1950, The George Washington University	Ohio	Esch, Albert Frederick (III) A.B. 1949, A.M. 1950, The George Washington University	D.C.
Laurel, Martin Thomas (III) A.B. 1948, Reusslaer Polytechnic Institute	Conn.	Evans, John Jacob (II) A.B. 1947, Lehigh University	Pa.
M.S. 1950, The George Washington University		M.S. 1951, The George Washington University	
Laurel, Shelton Phelps (II) A.B. 1952, The George Washington University	Utah	F	
Laurel, Neilson Thomas (I) A.B. 1950, Western Maryland College	Va. Md.	Feather, Ben W. (I) A.B. 1952, Duke University	Mo.
Laurel, Robert Michael (IV) A.B. 1949, University of Pittsburgh	Pa.	Felbes, Francisco, Jr. (II) B.S. 1950, The George Washington University	Puerto Rico
Laurel, Harvey Jennings (I) A.B. 1948, Duke University	Iran	Fee, Norman Francis (I) A.B. 1952, Carleton College	N.M.
Laurel, Donald Skene (I) M.S. 1949, Emory University	Calif. Ga.	Feltman, David Brown (II) A.B. 1952, The George Washington University	Va.
Laurel, Richard Hal (IV) A.B. 1949, Kansas State College of Agriculture and Applied Sciences	Va.	Fenick, John (I) B.S. 1952, Rutgers University	N.J.
Laurel, Lafayette II (I) A.B. 1952, Ohio State University	Ohio	Ferguson, William Holmes (IV) B.S. 1949, University of Tulsa	Okla.
Laurel, John Thomas (I) A.B. 1951, University of Wisconsin	D.C.	Flickinger, Ted Lawrence (III) B.S. 1950, Western Reserve University	Ohio
Laurel, William Arthur (IV) A.B. 1948, University of Wisconsin	Wis.	Folmer, Steve Evangelos (III) B.S. 1949, University of Maryland	Md.
Laurel, James Douglas (IV) A.B. 1949, Villanova College	N.J.	Foulke, Charles William (IV) A.B. 1949, Ohio State University	Ohio
Laurel, Edward Allen (III) A.B. 1949, Harvard University	D.C.	Furlow, William Loomis (IV) A.B. 1949, Carleton College	Minn.
Laurel, Kenneth Adair (IV) A.B. 1949, Augustana College	S.D.	G	
Laurel, Charles Creighton (IV) B.S. 1949, University of Nevada	D.C.	Gall, John Christian, Jr. (IV) B.S. 1949, Yale University	D.C.
		Gallinek, Wilfred Ernest (II) A.B. 1951, Syracuse University	D.C.
		Garcia, Robert Cummings (I) B.S. 1949, University of Florida	Fla.
		Ger, Wesley Hayman (II) A.B. 1951, University of California at Los Angeles	Calif.
		George, Lynn Darcy (I) George, Myron Don (I)	Va. Kans.

Gibbings, Raymond Jacobus (I)
A.B. 1952, Stanford University
Gibby, John Francis (III)
A.B. 1949, Park College
B.S. 1952, University of Missouri
Gill, Charles Richard (II)
A.B. 1952, Lafayette College
Gillard, William Henry (IV)
A.B. 1951, The George Washington University
Gillim, Parvin Douglas (II)
A.B. 1951, Dartmouth College
Ginsberg, David Kellner (III)
A.B. 1951, The George Washington University
Glew, William Bainbridge (IV)
B.S. 1950, Yale University
Gordon, Howard Leo (IV)
B.S. 1948, M.S. 1949, The George Washington University
Gould, Stanley Benton (IV)
B.S. 1949, Haverford College
Graham, Kenneth Donald (I)
Grunsten, Russell Carl (IV)

H

Hand, Harold Ronald (I)
B.S. 1952, Franklin and Marshall College
Harrigan, John Thomas (IV)
Harris, Forest Claire (IV)
B.S. 1940, The George Washington University
Harris, John Warton, Jr. (III)
A.B. 1952, University of Wisconsin
Hart, John Thomas (II)
B.S. 1951, Rutgers University
Hayes, Cornelius John (III)
A.B. 1950, Yale University
Healy, Paul Thomas (IV)
Herd, Jean Robert (III)
B.S. 1950, Johns Hopkins University
Herman, Elton (I)
Heywood, Robert Monroe (III)
B.S. 1950, University of Wisconsin
Hicks, Herbert Hollis (III)
A.B. 1950, Harvard University
Hilbert, Fred George (II)
A.B. 1951, Syracuse University
Hiltabidle, Stephen Bartholf (II)
A.B. 1951, Lafayette College
Holley, John Calvert, Jr. (I)
A.B. 1952, Vanderbilt University
Hollingsworth, James Boetler (IV)
Horowitz, Bruce Gordon (II)
A.B. 1950, Harvard University
Horton, Richard Edward (III)
Hawk, Vernon Neal (III)
Howard, Percy John (III)
B.S. 1949, University of Alabama
Huffman, Richard Myall (II)
A.B. 1951, Haverford College
Huntwork, Bruce Leslie (II)

I

Ice, Inez Lorraine (IV)
B.S. 1940, University of Rochester
Ice, John Frederick (IV)
Ionne, Joseph Anthony (II)
A.B. 1951, The George Washington University

Ariz.

Mo.

Md.

Pa.

Ky.

Md.

D.C.

Fla.

Md.

Wash.

Fla.

Pa.

N.J.

D.C.

Wis.

N.J.

Conn.

W.Va.

D.C.

D.C.

Wis.

Miss.

N.Y.

Md.

Fla.

Calif.

Calif.

Md.

Calif.

Ala.

Md.

Calif.

N.Y.

D.C.

Conn.

J

Jackson, Edwin W. (I)
A.B. 1952, Occidental College
Jensen, Jack Monsen (IV)

K

Kahlbaugh, Richard Allen (I)
B.S. 1952, Franklin and Marshall College
Kane, William Matthew, Jr. (III)
A.B. 1950, College of the Holy Cross
Kellam, Donald Swift, Jr. (II)
A.B. 1952, The George Washington University
Kizales, Adolphe Charles (II)
Kiel, Frank Wilson (III)
A.B. 1950, University of Pittsburgh
Kimmerling, Richard William (I)
Kingsley, Paul L. (IV)
B.S. 1957, Northwestern University
M.S. 1940, University of California at Los Angeles
Kinsman, Robert Gordon (IV)
A.B. 1950, The George Washington University

Kirby, James Chasey, Jr. (II)
Kirby, Taylor Herman, Jr. (IV)
A.B. 1949, Birmingham-Southern College
Kirk, Michael James (III)
Kieh, Thomas Robert (IV)
Klein, David Mendel (IV)
Knox, Paul Raymond (III)
A.B. 1950, University of California

Kotz, Herbert Louis (I)
Kramer, Norman Clifford (III)
B.S. 1948, The Citadel
M.S. 1950, The George Washington University

Krichel, Irvin I. (II)
B.S. 1951, Pennsylvania State College

Kritzer, Herbert (III)
A.B. 1948, Syracuse University
A.M. 1949, University of Pennsylvania

Kroner, Lawrence Roy (II)
A.B. 1951, The George Washington University

Kuitema, Frederick Henry (III)
B.S. 1950, Union College

L

Lambert, Margaret Lucille (I)
A.B. 1951, The George Washington University

LaMotte, Peter (II)
A.B. 1951, Oberlin College

Larson, Robert LeRoy (IV)
A.B. 1949, Montana State University

Leabhart, John William, Jr. (IV)
B.S. 1952, University of Pittsburgh

Leary, Patrick James (IV)
A.B. 1948, University of Omaha

Lee, Hei Kit (II)
Leech, Sarah Pamela (I)
A.B. 1952, Wells College

Lester, Melvin Arthur (I)
A.B. 1952, Montana State University

Levitsky, Leon Robert (III)
B.S. 1951, Muhlenberg College

Lewis, Edward, Jr. (II)
A.B. 1951, The George Washington University

D.C.

Utah

Pa.

Md.

Va.

D.C.

Pa.

D.C.

Md.

Md.

Md.

N.J.

Ala.

Va.

D.C.

D.C.

Calif.

D.C.

N.Y.

Pa.

N.Y.

Ill.

N.J.

Va.

Md.

Ky.

Mont.

Va.

Va.

China

Md.

Mont.

Pa.

D.C.

Lidley, Martin David (III) B.S. 1950, The George Washington University	N.Y.	Meehan, William Lloyd (II) B.S. 1951, Alabama Polytechnic Institute	Va.
Linneaver, Paul Glenwood (II) A.B. 1951, Duke University	Va.	Melhorn, George Ira (II) A.B. 1951, Gettysburg College	Pa.
Lotmar, Walter Rolfe (I) B.S. 1951, Tufts College	Mass.	Miele, Albert John (III) B.S. 1950, Georgetown University	D.C.
Lourea, Paul Herbert (II) Long, Charles W., Jr. (III) Longtown, Don Woodward (IV) A.B. 1950, The George Washington University	Md. Fla. Md.	Miesfeld, Roger Randolph (IV) B.S. 1949, University of Wisconsin Miller, Glenn Collins (IV) Miller, Howell Douglas (IV) D.V.M. 1941, Agricultural and Mechanical College of Texas	Wis. Calif. D.C.
Lone, Francis Gerald (I) Lyons, John Hugh, Jr. (II) B.S. 1950, Virginia Military Institute	D.C. D.C.	Miller, Robert Allen (I) A.B. 1952, Duke University Miller, Robert Thomas (IV) B.S. 1949, Rutgers University Minard, William Douglas (II) B.S. 1951, Queens College	Fla. N.J. N.Y.
M			
Macanlay, Robert Joseph, Jr. (I) A.B. 1951, Georgetown University	Cuba	Misenheimer, H. Robert (I) Modlin, Albert Jay (III) B.S., M.S. 1949, The George Washington University	Idaho D.C.
MacIntyre, Willard Frank (III) A.B. 1950, Harvard University	Fla.	Morrell, Roger Merritt (III) B.S. 1951, Haverford College	Md.
Magley, Dale Hamner (IV) B.S. 1948, A.B. 1949, Idaho State College	Idaho	Morrison, Thomas Lloyd (II) Mueller, Stanley Adolph Julius, Jr. (I) A.B. 1952, University of California	Md. Calif.
Marion, Edward Malcolm (II) B.S. 1951, The George Washington University	Va.	Murphy, William Raymond, Jr. (II) B.S. 1949, University of Akron	Ohio
Matheson, Robert Cornelius (I) B.S. 1952, Michigan State College	Mich.	Mutz, Sterling Burt (I)	Calif.
Mattina, Lawrence Charles (II) B.S. 1951, Pennsylvania State College	Pa.	N	
Mattwood, Carl Christopher (IV) B.S. 1948, St. Vincent College	Pa.	Negulescu, Paul (II) B.S. 1951, The George Washington University	D.C.
Mattus, James Ralph (I) A.B. 1952, Carleton College	N.J.	Nelson, Warren James (IV) B.S. 1948, University of Wisconsin	Ariz.
Mattus, John William (III) A.B. 1950, Carleton College	N.J.	North, Elmer Ford (I) A.B. 1952, Stanford University	Calif.
Mattus, John Oliver (II) A.B. 1951, Washington and Lee University	Va.	O	
Mattus, John Peter (II) A.B. 1952, The George Washington University	Md.	Oartel, Ruth Anne (III) B.S. 1950, University of Maryland	D.C.
Mattus, Robert Carl (III) A.B. 1950, University of California	Calif.	Olschlager, Gerald Albert (IV) Olson, Ray Andrew (I)	Wis. Calif.
Mattus, Lyman Gates (II) A.B. 1952, Dartmouth College	D.C. N.J.	Oram, Melvin (IV) B.S. 1949, University of Scranton	Pa. N.J.
Mattus, Robert John (I) A.B. 1950, The George Washington University	N.J. Pa.	O'Rourke, Franklyn Sewall (II) A.B. 1950, Lafayette College	Ind.
Mattus, John Robert (III) A.B. 1950, The George Washington University	Pa.	Owen, Richard Roberts (IV) B.S. 1949, The George Washington University	
McGowan, Joseph Aaron (IV) B.S. 1948, Utah State Agricultural College	Utah	P	
McGowan, Frederick Kenneth (II) B.S. 1951, Grove City College	Pa.	Padgett, Glenn Ernest (IV) A.B. 1949, Duke University	Fla.
McGowan, John Gregor, Jr. (IV) A.B. 1949, Stanford University	Ariz.	Palmer, Barber Clayton, Jr. (III) A.B. 1950, Dartmouth College	Md. D.C.
McGowan, Clinton Jackson, Jr. (II) A.B. 1952, The George Washington University	Va.	Pappas, Stephen S. (I) B.S. 1952, The George Washington University	
McGowan, Garland Young, Jr. (II) B.S. 1950, University of Oklahoma	Okla.	Parkinson, Roger West (III) B.S. 1951, Brigham Young University	Md.
McGowan, Ronald Paul (I) A.B. 1952, Bowdoin College	Maine	Pauly, John Frederick (III) Pentecost, Richard Livingston (I)	Mo. Va.
McGowan, John Wallace (IV) A.B. 1950, The George Washington University	Md.	Peppard, Matthew James (II) A.B. 1951, Harvard University	Fla.
McGowan, Howard Gurr (II) Meany, Thomas Francis (IV) B.S. 1949, Georgetown University	Utah D.C.	Perna, Louis Robert (IV) A.B. 1949, The George Washington University	D.C.

Peterson, Charles Raymond (II)	Ill.	Schocken, Victor (I)	D.C.
Phillips, Robert Dean (I)	Ala.	A.B. 1942, New York University	
B.S. 1952, Howard College		M.S. 1943, Oregon State College	
Pittow, David James (IV)	Tex.	Ph.D. 1947, California Institute of Technology	D.C.
B.S. 1950, Texas Christian University			
Plyler, Cranford Oliver, Jr. (IV)	Md.	Seckinger, Daniel Lamont (III)	N.D.
B.S. 1948, High Point College		A.B. 1951, The George Washington University	
Poole, Robert Smallwood (IV)	D.C.	Senft, Otto Ernest (III)	N.J.
A.B. 1950, The George Washington University		A.B. 1943, Wartburg College	
Porter, Bennet Allen, Jr. (IV)	Md.	D.B. 1946, Wartburg Seminary	Pa.
Pratt, Curtiss Robert (II)	Ill.	Shannon, Roger Hall (I)	
A.B. 1950, The George Washington University		A.B. 1951, Dartmouth College	
Price, Curtis Lee (IV)	Calif.	Sheller, Albert Lester II (I)	Va.
		B.S. 1952, Franklin and Marshall College	Ohio
R			
Raymond, Mark Bradford (I)	Md.	Shilling, Charles Utley (II)	Idaho
B.S. 1951, University of Maryland		Simak, Ernest James (I)	
Rawlings, Joseph Edwin, Jr. (IV)	D.C.	B.S. 1952, Western Reserve University	N.C.
A.B. 1950, The George Washington University		Simmons, Boyd K. (III)	D.C.
Reily, Henry Harold, Jr. (I)	Calif.	A.B. 1950, Brigham Young University	
Reitman, Robert Stephen (II)	N.J.	Simpson, Charles Fredrick (IV)	
B.S. 1951, The George Washington University		B.S. 1949, Wake Forest College	
Rhame, Richard Coleman (III)	N.Y.	Singer, Lawrence Robert (III)	Va.
A.B. 1950, Princeton University		B.S. 1950, The George Washington University	
Rhoads, John Charles (I)	Pa.	Slack, Richard Lee (III)	Ohio
B.S. 1952, St. Francis College		B.S. 1949, West Virginia Wesleyan College	Calif.
Rich, Richard Budge (I)	Md.	Smith, Casper Hayden (IV)	D.C.
A.B. 1952, University of California at Los Angeles		Smith, Mansfield Ferry Williams (I)	Conn.
Richardson, James Augustine (II)	D.C.	Snyder, Charles Lindbergh (I)	
A.B. 1952, The George Washington University		B.S. 1951, University of Pittsburgh	Ohio
Richman, Donald William (I)	Canada	Snyder, David Deal (I)	
Riker, Robert Peter (II)	N.J.	B.S. 1952, Northwestern University	Fla.
B.S. 1951, Villanova College		Solomonson, Carl Edward (IV)	Ohio
Rivara, George Leonard (I)	N.Y.	B.S. 1950, Western Reserve University	
A.B. 1952, Syracuse University		Spangler, Ronald Tice, Jr. (I)	Pa.
Robinson, Guy Harold, Jr. (II)	Md.	A.B. 1952, Duke University	
A.B. 1952, The George Washington University		Speevack, Harold Lynn (IV)	Pa.
Robinson, Tom Witten (III)	Calif.	B.S. 1949, Ohio University	
A.B. 1949, Occidental College		Sperring, Thomas Andrew (I)	Pa.
Robitscher, Jonas Boush (II)	D.C.	B.S. 1952, University of Pittsburgh	Wash.
A.B. 1942, Brown University		Stachowiak, Edward Joseph (III)	
J.D. 1948, The George Washington University		B.S. 1951, University of Pittsburgh	Ala.
Rosen, Richard James (II)	N.Y.	Stansfield, James Arthur (IV)	
Rosenblum, David Joseph (IV)	N.Y.	B.S. 1949, State College of Washington	
B.S. 1949, The George Washington University		Stewart, Jonas Hartsell (IV)	W.Va.
Rosendorf, Stanley Bernard (IV)	Md.	B.S. 1949, Alabama Polytechnic Institute	
B.S. 1948, University of Maryland		Stine, Oscar Cebren (III)	Va.
M.S. 1952, The George Washington University		A.B. 1950, Oberlin College	Ohio
Rotermund, Maynard Burr (II)	Calif.	Stok, James Logan (I)	W.Va.
A.B. 1946, University of California		Stone, Rodney Alan (III)	Ky.
S		B.S. 1950, Tulsa University	Mich.
Sager, Stanley Melvin (IV)	Va.	Stormont, James Russell (III)	
A.B. 1949, Duke University		Strasser, Norl Faine (IV)	Utah
Sanders, Bertram Webb (IV)	Ind.	Stromski, Gerald Edward (IV)	Md.
A.B. 1949, Earlham College		B.S. 1950, Wayne University	
Sandmeyer, Melvin Wesley, Jr. (IV)	D.C.	Sumsion, Spafford Ray (I)	
A.B. 1950, The George Washington University		Sutton, Harold Griffith, Jr. (II)	Ill.
Saville, John William (IV)	Md.	A.B. 1951, Amherst College	
A.B. 1949, The George Washington University		Sweet, Carlton Edward (III)	Maine
		A.B. 1951, The George Washington University	
		Swett, Carlton Edward (III)	
		A.B. 1950, Bowdoin College	N.C.
T			
Tall, Nelson Monroe (II)			
B.S. 1949, Wake Forest College			

Taylor, Herbert Bradley (III) B.S. 1960, The George Washington University	Fla.	Works, James Hubbard (I) B.S. 1952, University of Massachusetts	Mass.
Taylor, Ernest Howard (IV) A.B. 1950, The George Washington University	D.C.	Wells, Charles George (IV) B.S. 1949, University of Wisconsin	Wis.
Trotter, James Blake (I) A.B. 1952, Walsh College	Ind.	Wellwood, Robert Edward (III) A.B. 1950, Columbia University	N.J.
Tuckson, John Milton (III) A.B. 1947, San Diego State College	Calif.	Whitlock, Charles Barton (III) B.S. 1952, The George Washington University	N.J. D.C.
Tucker, Edward Young Cox (IV) A.B. 1940, University of North Carolina	N.C.	Wilkes, John Daniel (I) Williams, Kathryn Anne (I)	Wash. Pa.
Tucker, Howard Erwin (III) A.B. 1950, The George Washington University	D.C.	Williams, Polly Teed (IV) B.S. 1948, The George Washington University	D.C.
Tucker, Neelyton Theodore (I) Graduated, James Leon (IV)	Fla.	Williams, Robert Edwin (I) Wilson, Jack Herbert (III)	D.C. Okla.
Tucker, Harold Adrian (III) B.S. 1950, University of Cincinnati	Maine Ohio	Windle, William Lansden (II) B.S. 1951, Duke University	Fla.
Tucker, Robert Irwin (IV) B.S. 1948, The George Washington University	D.C.		
Y			
Van Herpe, Leo Bryant (II) B.S. 1951, American University	Md.	Yalom, Ivan David (I) Yanowitz, Gilbert Herbert (I)	D.C. N.Y.
Van, Clarence Houston (IV) B.S. 1947, Wayne University	Mich.	Yoder, Paul Timothy (II) B.S. 1950, Eastern Mennonite College	Md.
Van Zandt, Richard Dewitt (I) B.S. 1952, Marquette College	Fla.	Young, Vernon Cole (II) Youngblood, Edward W. (III)	Utah D.C.
Van, Fred Kenneth (II)	Puerto Rico Ill.	A.B. 1950, The George Washington University	
Z			
Walt, Samuel (III) B.S. 1950, Whitworth College	Calif.	Zatoff, Lawrence Irving (I) Zelko, Daniel Milan (I)	D.C. Pa.
Watson, Richard C. (I)	Pa.	B.S. 1952, University of Pittsburgh	

SUMMARIES OF REGISTRATION

1952-53

NUMBER OF REGISTRANTS

Class entering September 1952.....	95
Class entering September 1951.....	83
Class entering September 1950.....	77
Class entering September 1949.....	91
Total.....	346

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

Alabama.....	5	New Mexico.....	1
Arizona.....	4	New York.....	15
California.....	27	North Carolina.....	6
Colorado.....	1	North Dakota.....	1
Connecticut.....	4	Ohio.....	5
District of Columbia.....	66	Oklahoma.....	23
Florida.....	16	Pennsylvania.....	1
Georgia.....	1	Rhode Island.....	1
Idaho.....	7	South Dakota.....	3
Illinois.....	6	Texas.....	6
Indiana.....	3	Utah.....	28
Kansas.....	1	Virginia.....	5
Kentucky.....	3	Washington.....	3
Maine.....	3	West Virginia.....	8
Maryland.....	3	Wisconsin.....	1
Massachusetts.....	44	Canada.....	1
Michigan.....	2	China.....	1
Minnesota.....	1	Cuba.....	1
Mississippi.....	2	Iran.....	3
Missouri.....	2	Puerto Rico.....	3
Montana.....	3	Total.....	346
New Jersey.....	18		

GRADUATES OF COLLEGES REGISTERED IN THE SCHOOL OF MEDICINE

Akron, University of.....	1	California, University of.....	9
Alabama Polytechnic Institute...	1	California, University of, at Los Angeles.....	3
Alabama, University of.....	2	Catholic College.....	4
American University.....	2	Catholic University of America.....	1
Amherst College.....	1	Cincinnati, University of.....	1
Augustana College.....	1	Cinadel.....	2
Birmingham-Southern University.....	1	Columbia University.....	4
Boysdon College.....	2	Dartmouth College.....	1
Brigham Young University.....	3	Dayton, University of.....	1
Brooklyn College.....	2	Denver, University of.....	1
Brown University.....	2	Duke University.....	1
California Institute of Technology.....	1		

Earlham College	1	Pennsylvania, University of	1
East Carolina Teachers College ..	1	Pittsburgh, University of	7
Eastern Mennonite College	1	Princeton University	1
Emory University	1	Queens College	1
Florida, University of	1	Rensselaer Polytechnic Institute ..	1
Franklin and Marshall College	4	Roanoke College	1
George Washington University	66	Rochester, University of	1
Georgetown University	5	Rutgers University	3
Gettysburg College	1	St. Francis College	1
Grove City College	1	St. Vincent College	1
Harvard University	7	San Diego State College	2
Haverford College	3	Scranton, University of	1
High Point College	1	Southern California, University of	1
Holy Cross, College of the	1	Stanford University	6
Howard College	2	Sweet Briar College	1
Howard University	1	Syracuse University	4
Idaho State College	1	Texas, Agricultural and Mechan-	
Idaho, University of	1	ical College of	1
Johns Hopkins University	2	Texas Christian University	1
Kansas State College of Agricul-		Tufts College	1
ture and Applied Sciences ..	1	Tulsa, University of	2
Lafayette College	4	Union College	1
Laligh University	1	Utah State Agricultural College ..	1
Maryland, University of	5	Vanderbilt University	1
Massachusetts, University of	1	Villanova College	3
Michigan State College	1	Virginia Military Institute	1
Michigan, University of	1	Wabash College	1
Missouri, University of	1	Wake Forest College	3
Montana State University	3	Warburg College	1
Mount Holyoke College	1	Warburg Theological Seminary ..	1
Mt. Auburn College	2	Washington and Jefferson College ..	1
Muskegon College	1	Washington and Lee University ...	1
Newada, University of	1	Washington, State College of	2
New York University	2	Wayne University	2
New York, College of the City of	1	Wells College	1
North Carolina, University of ...	2	West Virginia Wesleyan College ..	1
Northwestern University	2	Western Maryland College	1
Oberlin College	2	Western Reserve University	4
Occidental College	2	Whitworth College	1
Ohio State University	2	Wisconsin, University of	9
Ohio, University	1	Yale University	4
Oklahoma Wesleyan University	1	Yankton College	1
Oklahoma, University of	2		
Oregon, Municipal University of ..	1	Number of College Graduates	265
Oregon State College	1	Number of Colleges Repre-	
Park College	1	sented	110
Pennsylvania State College	2		

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THE GEORGE WASHINGTON UNIVERSITY
BULLETIN

THE LAW SCHOOL

1953-54

ERRATA

The Board of Trustees of The George Washington University, on February 12, 1953, authorized the following change in the tuition fee as stated on page 17 of the 1953-54 Law School catalogue, effective September 1, 1953:

Tuition fee, for each credit hour for which the student registers.....	\$17.00
For the degree of Doctor of Juridical Science.....	
For work leading to and including the final examination.....	450.00
Residence fee, charged each candidate for the degree of Doctor of Juridical Science wishing to maintain "in residence" status during any term after completion of tuition requirements.....	17.00

Calendar, page vi, summer term dates are for the summer of 1953.
Dates for 1954 will be announced later.

THE
GEORGE
WASHINGTON
UNIVERSITY
BULLETIN

VOL. LII

No. 2

THE LAW SCHOOL

WASHINGTON, D. C.

PUBLISHED IN FEBRUARY
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WASHINGTON
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LIBRARY

1844-1845

WASHINGTON, D.C.

LIBRARY OF THE
UNIVERSITY OF THE DISTRICT OF COLUMBIA

1844-1845

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THE LAW SCHOOL

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Barbara Sanders Stratton, *Secretary to the Dean of the Law School*
Ethel Mary Casey, *Secretary*

THE UNIVERSITY

HISTORY AND ORGANIZATION

The idea of a university in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature;—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

The George Washington University operates under a charter granted by an act of Congress of February 9, 1821, to Columbian College in the District of Columbia. In 1873 the name was changed to "Columbian University" and in 1904 to "The George Washington University".

The University as it is now organized consists of the Junior College, comprising the work of the freshman and sophomore years; Columbian College, the senior college of liberal arts, which offers work leading to the Bachelor's and Master's degrees; the Graduate Council, which offers work leading to the degree of Doctor of Philosophy; the professional schools, which include Medicine, Law, Engineering, Pharmacy, Education, and Government; the College of General Studies; the Division of University Students; the Division of Special Students; the Division of Air Science; and the Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final approved list of the Association of American Universities. This fact not only assures to students the academic standards of this Association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women. The University is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal

Education and Admissions to the Bar of the American Bar Association.

LOCATION

The George Washington University is in downtown Washington, four blocks west of the White House and east of the Potomac River with its extensive parkway. Within a few blocks are the buildings housing the offices of many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor. Also readily accessible are the Capitol, the Library of Congress, the National Archives, the Supreme Court, and other federal courts.

THE LAW SCHOOL

THE LAW SCHOOL

THE FACULTY AND STAFF OF INSTRUCTION *

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 OSWALD SYMISTER COLCLOUGH, B.S., LL.B., LL.D., *Dean of Faculties*
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 LOUIS HARKEY MAYO, B.S., LL.B., *Secretary of the Law School*

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GEORGE BOWDOIN CRAIGHILL
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 A.B. 1903, University of the South; LL.B. 1906, Georgetown University.

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 A.B. 1899, Swarthmore College; LL.B. 1918, The George Washington University.

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 LL.B. 1897, The George Washington University.

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HECTOR GALLOWAY SPAULDING
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 B.S. 1900, University of Minnesota; LL.B. 1903, S.J.D. 1924, Harvard University.

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 LL.B. 1884, Boston University; A.M. 1901, Dartmouth College; LL.D. 1905, Litt.D. 1929, University of Vermont; LL.D. 1906, Georgetown University; Litt.D. 1910, Middlebury College; Litt.D. 1916, The George Washington University.

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Lecturer in Law

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A.B. 1932, Cornell University; LL.B. 1939, S.J.D. 1942, Brooklyn Law School; LL.M. 1948, The George Washington University.
- CONDER CAYWOOD HENRY
Adjunct Professor of Law
A.B. 1915, LL.B. 1920, The George Washington University.
- PHILIP FIELD HERRICK
Professorial Lecturer in Law
A.B. 1929, Williams College; LL.B. 1933, LL.M. 1936, The George Washington University.
- JOHN WINGFIELD JACKSON
Adjunct Professor of Law
B.S. 1928, University of Pennsylvania; LL.B. 1932, The George Washington University.
- ERNEST McCLAIN JONES
Assistant Professor of Law
B.B.A. 1949, LL.B. 1949, University of Mississippi.
- JOHN ALEXANDER KENDRICK
Clerk of the Trial Practice Court
A.B. 1942, LL.B. 1943, The George Washington University.
- JAMES ROBERT KIRKLAND
Adjunct Professor of Law
A.B. 1927, LL.B. 1928, LL.M. 1929, The George Washington University; Judge, United States District Court for the District of Columbia.
- MILTON PAUL KROLL
Lecturer in Law
A.B. 1934, West Virginia University; LL.B. 1937, Harvard University.
- BOLITHA JAMES LAWS
Adjunct Professor of Law
LL.B. 1913, LL.M. 1914, LL.D. 1950, Georgetown University; Chief Judge, United States District Court for the District of Columbia.
- WILLIAM THOMAS MALLISON, JR.
Assistant Professor of Law
A.B. 1940, University of Washington; LL.B. 1943, Vanderbilt University.
- LOUIS HARKEY MAYO
Assistant Professor of Law; Secretary of the Law School
B.S. 1940, United States Naval Academy; LL.B. 1949, University of Virginia.
- JOHN ALBERT McINTIRE
Professorial Lecturer in Law
A.B. 1928, Wittenberg College; LL.B. 1931, University of Cincinnati.
- LEROY SORENSON MERRIFIELD
Associate Professor of Law
A.B. 1938, LL.B. 1941, University of Minnesota; M.P.A. 1942, Harvard University.
- GEORGE EDWARD MONK
Professorial Lecturer in Law
A.B. 1928, LL.B. 1930, LL.M. 1934, The George Washington University.
- JAMES WARD MORRIS
Adjunct Professor of Law
A.B. 1912, University of North Carolina; Judge, United States District Court for the District of Columbia.

JAMES OLIVER MURDOCK*Professor of Law*

Ph.B. 1916, University of Chicago; LL.B. 1924, Harvard University.

FRANK HAMMETT MYERS*Adjunct Professor of Law*

LL.B. 1923, LL.M. 1924, The George Washington University; Judge, Municipal Court of the District of Columbia.

ALVIN LEROY NEWMYER*Adjunct Professor of Law*

LL.B. 1906, The George Washington University.

HERMAN ISRAEL ORENTLICHER*Associate Professor of Law*

A.B. 1933, LL.B. 1936, Harvard University.

CHARLES SYLVANUS RHYNE*Professorial Lecturer in Law*

LL.B. 1937, The George Washington University.

DUDLEY GRAHAM SKINKER*Associate Clerk of the Trial Practice Court*

LL.B. 1940, The George Washington University.

DAVID BENSON WEAVER*Assistant Professor of Law*

A.B. 1941, Ohio Wesleyan University; LL.B. 1948, Western Reserve University.

GLEN EARL WESTON*Assistant Professor of Law*

B.S. 1941, University of Maryland; LL.B. 1948, The George Washington University.

FREDERICK BERNAYS WIENER*Professorial Lecturer in Law*

Ph.B. 1927, Brown University; LL.B. 1930, Harvard University.

CHARLES JAMES ZINN*Lecturer in Law*

A.B. 1927, LL.B. 1930, Fordham University; LL.M. 1931, Georgetown University.

COMMITTEES***THE DEAN'S COUNCIL**Charles Sager Collier
Carville Dickinson Benson
James Oliver MurdockWilliam Thomas Fryer
James Forrester Davison
Robert McKinney Cooper**Leroy Sorenson Merrifield****COMMITTEE ON ADMISSIONS**Carville Dickinson Benson, *Chairman*
Harold Griffith Sutton

Louis Harkey Mayo

COMMITTEE ON GRADUATE STUDIESJames Forrester Davison, *Chairman*
Charles Sager Collier

James Oliver Murdock

Robert McKinney Cooper

* The President of the University and the Dean, the Assistant Dean, and the Secretary of the Law School are members ex officio of all committees.

COMMITTEE ON SCHOLARSHIP

Herman Israel Orentlicher, *Chairman*

Carville Dickinson Benson

Louis Harkey Mayo

COMMITTEE ON CURRICULUM

Leroy Sorenson Merrifield, *Chairman*

Herman Israel Orentlicher

Roger Allen Cunningham

LIBRARY COMMITTEE

James Oliver Murdock, *Chairman*

David Benson Weaver

Glen Earl Weston

GENERAL INFORMATION

LOCATION IN THE NATION'S CAPITAL

The George Washington University Law School, now in its 88th year, is the oldest law school in the District of Columbia. The School took part as a charter member in 1900 in the organization of the Association of American Law Schools and it has been an active member of the Association since that time. It is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association.

Of special significance is the location of the Law School in the Nation's Capital, the focal point of the law in action, both American and international. The work of the School goes on in this environment, presenting a unique opportunity for observation and study of federal agencies—judicial, legislative, and administrative. Readily accessible are the Supreme Court of the United States, the federal trial and appellate courts of the District of Columbia, and, in addition, federal courts of special jurisdiction, such as the United States Court of Claims, the United States Court of Customs and Patent Appeals, and the Tax Court of the United States. Current federal legislation can be studied as it is considered by Congressional committees and as it comes up for debate on the floor of the House of Representatives and the Senate. It is with respect to the federal administrative agencies that the students here in Washington have matchless opportunities for study and observation. They can attend informal and formal hearings of these agencies and can obtain from the docket sections complete records of administrative adjudication in specific cases. Illustrative of such federal agencies are the Interstate Commerce Commission and the Civil Aeronautics Board in the field of transportation; the Federal Trade Commission in the field of trade regulation; the Securities and Exchange Commission in the field of security issues and corporate finance; the National Labor Relations Board in the field of labor-management relations; the United States Patent Office in the field of patent law; the Federal Power Com-

mission in the field of water, natural gas, and electric power; and the Federal Communications Commission in the field of radio and television.

Supplementing these environmental advantages of law in action are the exceptional research library collections in the Library of Congress, in the various departments of the Federal Government, and in the libraries of the headquarters of national and international organizations located in Washington. The notable library of the Carnegie Foundation for International Peace has been acquired by The George Washington University for use of research students in international and comparative law, fields with respect to which Washington has come to be called "The Capital of the World".

MORNING AND EVENING DIVISIONS

The School maintains morning and evening divisions. The evening division conforms to the same standards as the morning division, including the same teaching staff.

HOURS OF INSTRUCTION

Morning sections: Monday through Friday, 9:10 A.M. to 1:00 P.M.
Trial Practice Court: Saturday, 9:30 to 11:30 A.M.
Evening sections: Monday through Friday, 5:50 to 7:40 P.M.

THE LIBRARY

The Law School Library of 30,000 volumes contains the official reports of the decisions of the courts of last resort of all the states prior to the National Reporter System and of fourteen states complete to date; the National Reporter System, complete; the reports of the United States Supreme Court and lower federal courts, and the reports of federal administrative agencies; Shepard's Citations for the units of the Reporter System; the English Reprint and English Law Reports; the United States statutes and codes; reasonably complete sets of statutes of all of the states; the English statutes; the principal English and American digests and encyclopedias; collections of special reports and annotated cases; and the leading textbooks and legal periodicals.

The Library, which is on the fourth floor of Stockton Hall, is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday, 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday. Books and other materials do not circulate and must be used in the library.

THE LAW REVIEW

The George Washington Law Review, published by the University, is edited and managed by students of the Law School under the supervision of Faculty advisers. It is devoted exclusively to state and federal public law. The location of the University in the National Capital, where the

primary sources of federal public law may be observed in operation, affords an unexcelled opportunity for specialization in this field.

The *Review* organization includes a faculty editor-in-chief, an associate faculty editor, a faculty board of advisory editors, a board of departmental advisory editors, and a board of student editors. The student editors are chosen each year on the basis of scholarship.

THE STUDENT BAR ASSOCIATION

Every student in the Law School is a member of the Student Bar Association. This is organized to enable students to become better acquainted with problems of the profession, to foster professional ideals, and to bring about closer contact with members of the profession engaged in active practice of the law.

The work of the Student Bar Association is carried on by various committees and by group and general meetings of a professional and social nature. From time to time lectures are given by outstanding authorities on legal and professional problems.

An important activity is the Van Vleck Case Club Competition, which provides an opportunity for training in appellate advocacy. First and second year students participate as contestants before courts composed of members of the Faculty and the local bar. Senior law students of the Case Club also sit as judges. The final argument is held before a court composed of distinguished federal judges.

ORDER OF THE COIF

The Order of the Coif, a national honor society with chapters in thirty-nine law schools, aims "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." The George Washington University Chapter was established in 1926. Members are elected each year from the highest-ranking 10 per cent of the graduating class of the Law School.

ADMISSION

APPLICATION FOR ADMISSION

The Law School, as other colleges, schools, and divisions of the University, except the Division of Air Science, is coeducational.

An applicant for admission must obtain from the Office of the Director of Admissions of the University an application blank which he must fill out completely and return with the application fee of \$3.

Two recent photographs with the applicant's signature must accompany the blank.

To insure prompt action, applications should be filed not later than August 1 for the fall term, January 1 for the spring term, and May 1 for the summer term.

Requirements concerning records of higher institutions previously attended are set forth on the sheet attached to the application blank.

Attendance at classes is limited to students registered for credit. "Auditing" classes is not permitted.

REQUIREMENTS FOR ADMISSION

For the Degrees of Bachelor of Laws and Juris Doctor

Bachelor of Laws.—A Bachelor of Arts or equivalent degree awarded upon completion of a four-year course in an approved college or university is required. All pre-legal work must be of a satisfactory quality and distribution. No student will be admitted who has been in attendance at another law school and who is ineligible to return to that school in good standing. From the applicants, a selection will be made by the Committee on Admissions.

Juris Doctor.—A student does not register as a candidate for this degree until his last year in the Law School. For details, see page 26.

ADVANCED STANDING

Advanced standing toward the degree of Bachelor of Laws will be granted only for work successfully completed in other law schools which are members of the Association of American Law Schools.

Advanced standing will not be granted for law work already counted toward the Bachelor of Arts or other pre-legal degree.

Advanced standing toward the degree of Juris Doctor will not be granted.

For the Graduate Degrees

Candidates for graduate degrees must be accepted by the Committee on Graduate Studies.

*Master of Laws.**—A Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree from a member school of the Association of American Law Schools are required. Candidates for admission must have attained an average grade on all work done for the Bachelor of Laws degree equivalent to the relative position of a *B* average in the standards of grading at this Law School, except that, in the discretion of the Committee on Graduate Studies, applicants otherwise eligible may be admitted on proof of experience and attainment as an alternative.

Master of Comparative Law and Master of Comparative Law (American Practice).—The following are required: (1) the successful completion of and graduation from a course in arts, philosophy, letters, or

* One-half the work necessary for graduation from an approved college or university may be accepted as satisfying the admission requirement for pre-legal work, provided the applicant completed not less than twenty months of continuous service in the armed forces of the United States during World War II and prior to the beginning of the 1948-49 fall term.

sciences, equivalent to graduation from a gymnasium, lycee, or liceo; and (2) graduation in law from a recognized foreign university where training was in Civil Law.

Doctor of Juridical Science.—The following are required: a Bachelor of Arts or equivalent degree from an approved college or university and a Bachelor of Laws or equivalent degree, earned with high rank, from a member school of the Association of American Law Schools, and outstanding capacity for scholarly work in the field of law.

Unclassified Students

A person who is in good standing as a degree candidate in another law school which is a member of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student in order to earn credits for transfer to the other law school.

A person who is a member of the bar or a person, not a member of the bar, who is a graduate of a member school of the Association of American Law Schools may, at the discretion of the Dean, be admitted as an unclassified student.

Unclassified students are required to participate in the work of the course and take examinations. Courses taken by unclassified students will not be credited toward degrees at this Law School.

REGISTRATION

Before attending classes each student must present himself in person for registration. No student will be registered in the Law School until proper credentials have been filed and approved (see "Admission", *above*).

Registration is for the term or session only.

A late-registration fee of \$5 will be charged each student who is permitted to register after the regular registration days.

Registration may be changed only with the permission of the Dean.

FEES AND FINANCIAL REGULATIONS

Application fee, charged each applicant for admission, non-refundable.....	\$3.00
Tuition fee, for each credit hour for which the student registers.....	16.00
For the degree of Doctor of Juridical Science:	
For work leading to and including the final examinations.....	420.00
Student Bar Association fee, charged each student in the Law School for each term or any part thereof except the summer term.....	2 50
Graduation fee.....	20.00
Fee for printing and filing summary of doctoral dissertation.....	75 00
Fee for special examinations, for each subject.....	5.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Residence fee, charged each candidate for the degree of Doctor of Juridical Science wishing to maintain "in residence" status during any term after completion of tuition requirements.....	16.00

Service fee, charged each student for late payment of tuition, see "Payment of Fees"	1.00
Reinstatement fee, charged each student who is reinstated after being suspended for delinquency in fees.....	5.00

Registration in the University entitles each student to the following University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under "Health Administration", pages 24-25. These privileges, however, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

Subject to the approval of the Comptroller, a student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 3.

Spring Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due but who pays his fees on or before the fifteenth of the month in which payment is due is charged a service fee of \$1. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation

of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and the course is dropped before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

Withdrawal from a course or from the University between October 31 and the end of the fall term and between February 29 and the end of the spring term is permitted only in exceptional cases.

The grade of *F* (to be counted as zero) will be given in a course dropped without the approval of the Dean.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, LOAN FUNDS

Teaching Fellowships.—A limited number of teaching fellowships are available each year to prospective candidates for the Master of Laws degree. Each fellow receives an annual stipend, plus tuition for the academic year. The occupant of each of these fellowships follows an approved program of study and research, assists members of the Faculty in the guidance of first year students, and supervises student work in legal bibliography and the drafting of legal instruments. Upon satisfactory completion of the year's work, a fellow is recommended for the degree of Master of Laws. Applications should be submitted to the Dean of the Law School not later than March 1 preceding the period for which the fellowship is to be awarded.

Charles Worthington Dorsey Memorial Scholarship.—This scholarship, established in 1947 as a memorial to Charles Worthington Dorsey, Bachelor of Laws, '81, Master of Laws, '82, is awarded upon the recommendation of the Faculty of the Law School to a needy and promising graduate of Columbian College or other division of the University, with a Bachelor of Arts or other equivalent degree, who has maintained an

average of *B* as an undergraduate student and who desires to pursue the study of law as a full-time student. The scholarship covers tuition for the course leading to the first degree from the Law School, Bachelor of Laws or Juris Doctor, provided that the holder maintains an average of *B*. The right is reserved to suspend the benefits of the scholarship for cause at any time. The scholarship is awarded ordinarily once every three years.

Law School Scholarships.—Seven scholarships are available each year in the Law School to graduates of accredited colleges. Each scholarship provides full three-years' tuition in the morning division of the Law School. Candidates must have graduated in the upper fifth of their class and must have demonstrated qualities of leadership in addition to scholastic attainment. To retain the scholarship, the successful candidate must maintain a *B* average. Application must be made before February 1 to the Dean of the Law School.

Ellsworth Prize.—The Ellsworth Prize of \$25, established by the late Fritz von Briesen, is awarded to the student doing the best work in the subject of Patent Law Practice.

John Bell Larner Prize.—This prize, established by the bequest of John Bell Larner, consists of a medal which is awarded annually to that member of the graduating class in the Law School who attains the highest average grade in the entire course for the degrees of Bachelor of Laws or Juris Doctor.

John Ordronaux Prizes.—These prizes were established in 1909 by the bequest of John Ordronaux.

The amount of \$75 is awarded annually to the student in the Law School who has attained the highest average grade in the first year, full-time course; and \$75 to the student who has attained the highest average grade in the second-year, full-time course.

Through the generosity of friends of the University a number of loan funds are available to students in the Law School. Among them is the Henry Strong-William A. Maury Loan Fund established by the Henry Strong Educational Foundation in memory of Henry Strong and William A. Maury. Application for loans should be made to the Comptroller of the University.

REGULATIONS

Students in the Law School are subject to, and are expected to familiarize themselves with, the general University regulations stated in the University Catalogue.

AMOUNT OF WORK

Students without substantial outside employment may take a program of studies of fourteen hours a week in which the majority of credit hours must be in the morning sections. Students with substantial outside em-

ployment must take a limited program of studies not exceeding ten hours a week. Students taking a majority of their classes in the evening may not take more than ten hours a week. A minimum schedule of ten hours in the morning division and six hours in the evening division is required except in exceptional circumstances when authorized by the Dean.

ATTENDANCE

Regular attendance at classes is required and is necessary for successful work. A student who is deficient in class attendance in any course may, by action of the Faculty, be barred from taking the examination.

Attendance at classes is limited to students registered to take them for credit. "Auditing" classes is not permitted.

RESIDENCE REQUIREMENTS

Attendance in the morning classes for the fall and spring terms is counted as residence for an academic year. Attendance in the evening classes for the fall and spring terms is counted as residence for three-fourths of an academic year. Consequently, a morning student must attend six terms to meet residence requirements, an evening student must attend eight. Students for whom schedules of less than ten and six hours in the morning and evening divisions, respectively, are authorized will receive residence credit on a proportional basis. Attendance throughout the summer term, morning or evening, is counted on a proportional basis the same for residence purposes as like attendance during the fall or spring term.

Students planning to attend summer school sessions at other law schools and desiring to use credits obtained at such schools in their course at this Law School must first have the courses they wish to take approved by the Dean. In no event will credits be recognized in excess of those which might be obtained in a similar period in this School.

No student admitted with advanced standing will be recommended for the degree of Bachelor of Laws until he has completed in this School at least one year of residence and passed successfully twenty-eight credit hours with the average required for the degree.

GRADUATION REQUIREMENTS

Application for Graduation.—Application for a degree should be filed in the Office of the Registrar at the time of registration for the last term of the senior or final year.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation in absentia is approved by the Dean.

EXAMINATIONS

Written examinations are held at the end of each course. Every student is required to take the regular examinations unless excused. No excuse for absence will be granted except by the Dean and then only for illness or other emergency. Application for excuse must be made in writing not later than one month after the date of the examination. A grade of *NG* (no grade) will be entered on the record of a student thus excused, and he may take the next regularly scheduled examination in the course for which the excuse has been granted.

No special examinations will be given; except that, upon written application to the Dean, showing sufficient cause, a candidate for a degree at a convocation before the next regular examination, if he would be entitled to take a postponed examination, may, at the discretion of the Faculty, be given a special examination.

If a student fails to take an examination, a grade of *F* (to be counted as zero) will be recorded, unless the student has obtained the Dean's permission to drop the course according to regulations stated on pages 18-19 or to be excused from the examination.

GRADES

Grades are indicated by the letters *A*, excellent, 85-100; *B*, good, 75-84; *C*, satisfactory, 65-74; *D*, poor, 55-64—below standard for graduation; *F*, failed—below 55; and *NG*, no grade—student excused from failure to take regularly scheduled examination. See "Examinations" above, for grade upon failure to take an examination. The grades *A*, *B*, *C*, and *D* mean that the work has been completed and credit given for the courses. *F*, failed, means that no credit will be given. To obtain credit the student must repeat the course; but a student who has obtained an average of *C* in the work of the term just completed and the preceding term and received a grade of *F* in only one course during those terms may take the next regular examination in that course, or a special examination at the end of the next term if he is a candidate for a degree at a convocation before the next regular examination. If on such reexamination he receives a passing grade he will be given credit in the course. Both grades are recorded.

EXCLUSION AND PROBATION FOR POOR SCHOLARSHIP

Candidates for the Degrees of Bachelor of Laws and Juris Doctor.—A student who in one term, or two successive terms, fails in courses aggregating eight or more credit hours will be excluded, except that if currently registered he will be permitted to complete the work of the term. Such a student is not eligible thereafter to be registered in the Law School or to attend classes. While excluded he may, however, with the consent of the Faculty, be admitted to the next regular examinations

in those courses in which he has made a grade below passing, and if he receives a grade of passing in those courses with an average sufficient to make his cumulative average not less than *C*, he will be reinstated.

A student not subject to exclusion under the foregoing rule who at any time fails to maintain a cumulative average of at least *C*, will be placed on probation. A student on probation may at the discretion of the Dean be required to reduce his program of study. If a student on probation does not, by the end of the second term following that in which his average has fallen below *C*, receive grades sufficient to give him a cumulative average of at least *C*, he will be excluded, except that if currently registered he will be permitted to complete the work of the term.

The cumulative average of a student includes all the grades in all the courses taken while he is in the Law School as a candidate for a particular degree. When a course is repeated or a reexamination is taken, both the first grade and the subsequent grade or grades are counted in the cumulative average.

In special cases in which a student who has been excluded can clearly demonstrate that he has the capacity to pursue the study of law with a definite likelihood of success, his low grades being due to special circumstances beyond his control, such student may be readmitted by the Faculty subject to such conditions as the Faculty may impose.

Candidates for Graduate Degrees.—A candidate for one of the graduate degrees whose work is not satisfactory in the opinion of the Faculty, taking into consideration the requirements and standards for the degree, may, by action of the Faculty, be excluded at the end of the term for which he is currently registered.

Unclassified Students.—An unclassified student whose work is not satisfactory in the opinion of the Faculty may, by action of the Faculty, be excluded at the end of the term for which he is currently registered.

CLASSIFICATION OF STUDENTS

Students are divided into classes on the completion of credit hours as follows: first year, one through twenty-eight; second year, twenty-nine through fifty-six; third year, fifty-seven or more.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

RIGHT TO DROP STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University or from any class or classes, whenever, in the

interest of the student or the University, the University Administration deems it advisable to do so.

STUDENT LIFE

LIVING ACCOMMODATIONS

Women Students.—The Hattie M. Strong Residence Hall provides single rooms at \$35 a month and double rooms at \$30 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Girls under the age of twenty-one who are enrolled for six or more credit hours of academic work in the University and who are not living with their parents or relatives may live outside the dormitory only with the permission and approval of the Director of Activities for Women upon receipt of written requests from parents. In no case will permission be granted for such girls to live in apartments, except with persons approved by the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Single and double rooms are provided in Draper Hall, a temporary dormitory. Single rooms are \$17 a month; double rooms are \$13 a month a person. The University maintains a limited number of temporary apartment units for married veteran students and their families. Meals are served at the Student Union. Application forms for room reservation may be obtained from the Director of Activities for Men, Building R, 2027 H Street NW.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, 814 Twenty-second Street NW. The reservation of rooms in private houses must be made by students.

PLACEMENT OFFICE

The University Placement Office, 2114 G Street NW., provides assistance to students seeking full- and part-time employment. This office maintains a registry of positions locally and nationally available and refers qualified applicants for consideration. Information is also available on Civil Service examinations.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M.

P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school; (2) three visits by the University physician or surgeon, office or residence (District of Columbia), in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each term; (5) the above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in inter-collegiate or intra-mural games, or in any of the activities of the departments of physical education.

PLACEMENT SERVICE FOR GRADUATES

The Law School takes a continuing interest in the placement of its graduates. The Dean, the Faculty, and the University Placement Office cooperate in collecting information from alumni of the Law School, law firms, and government agencies concerning opportunities for legal positions throughout the country. Students are invited to discuss their placement problems with the Secretary of the Law School.

THE DEGREES OF BACHELOR OF LAWS AND JURIS DOCTOR

The programs of study leading to the degrees of Bachelor of Laws and Juris Doctor are addressed to the development and application of legal principles, skills, and ideals which are indispensable to the equipment of a lawyer for professional responsibility and leadership in modern society. They include, first and foremost, the traditional core of

legal education, namely, the study of legal materials—judicial, statutory, and administrative—and instruction in the technique of their use. These programs include the study of the nature and purpose of law, the history of the Anglo-American legal system, and the history and standards of the legal profession; practice in the skills of legal research and legal writing; elementary training in trial practice; and, through the medium of seminars, experience in group handling of legal problems.

REQUIREMENTS FOR THE DEGREES

BACHELOR OF LAWS

To be recommended for the degree of Bachelor of Laws (LL.B.) the student must have completed a residence period of not less than three academic years (four years for evening students) and eighty credit hours, with a cumulative average of at least *C*.

JURIS DOCTOR

The degree of Juris Doctor (J.D.) is conferred as a recognition of the completion at the George Washington University Law School, with high rank, of the required program of study for the Bachelor's degree, including experience in research and legal authorship. To be recommended for this degree the student must have completed: (1) a residence period of not less than three academic years (four years for evening students) in the Law School; (2) eighty credit hours with a cumulative average of at least *B* including one of the following courses: Comparative Law, Jurisprudence, or one of the graduate seminars; and (3) one year of acceptable service on the board of student editors of *The George Washington Law Review*, election to which is subject to regulations laid down by the Faculty. Students taking the combined Arts and Law or Engineering and Law courses are not eligible for this degree.

HONORS

The degree of Bachelor of Laws or of Juris Doctor "with distinction" will be awarded students who obtain a cumulative average of *A*.

CURRICULUM

Required and Elective Courses.—A program of required and elective courses has been developed in order to assure coverage of the basic courses as well as to allow a degree of flexibility to meet the diverse interests of students. All first-year courses, three second-year courses, and one third-year course are required, leaving a total of thirty-six hours of electives. In general, second-year students are restricted to second-year electives but in appropriate cases the taking of third-year electives will be approved. Similarly, specially qualified third-year students may secure approval to take graduate courses.

Practice and Trial Practice Court.—Classroom instruction is conducted in pleading and procedure, trial and appellate practice, and evidence. This instruction includes grounding in the principles of the Federal Rules of Civil Procedure and the Federal Rules of Criminal Procedure. In addition, each senior student is required to participate in the work of the Trial Practice Court, which includes the trying of cases as junior counsel and as senior counsel. A special section of the court is devoted exclusively to the trial of patent cases. Experience in preparing and arguing appellate court cases is available through the Case Club Competition.

Patent Law.—Students interested in patent law should take the following group of courses: Torts II—Unfair Trade Practices; Substantive Patent Law, Patent Office Practice, Patent Trial Practice Court, and Federal Anti-Trust Laws.

Curriculum.—Following is the curriculum for students beginning in the fall term. Adjustments are made to meet the needs of students beginning in the spring and summer terms.

Morning Division

FIRST YEAR

FALL TERM		SPRING TERM	
	Credit Hours		Credit Hours
Legal Method and Legal System	4	Real Property	4
Contracts	4	Contracts	2
Personal Property	2	Torts I	4
Criminal Law	4	Constitutional Law	4
Total	14	Total	14

SECOND YEAR

FALL TERM		SPRING TERM	
	Credit Hours		Credit Hours
Civil Procedure	4	Evidence	4
Electives	10	Conveyances and Wills	4
Total	14	Electives	6
		Total	14

THIRD YEAR

FALL TERM		SPRING TERM	
	Credit Hours		Credit Hours
Trial Practice Court	2	Trial Practice Court	2
Electives	10	Electives	10
Total	12	Total	12

Evening Division

FIRST YEAR			
FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Legal Method and Legal System..	4	Torts	4
Contracts	4	Contracts	4
Personal Property	2	Criminal Law	2
Total.....	10	Total.....	10
SECOND YEAR			
FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Real Property	4	Constitutional Law	4
Civil Procedure	4	Evidence	4
Electives	2	Electives	2
Total.....	10	Total.....	10
THIRD YEAR			
FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Electives	10	Conveyances and Wills	4
Total.....	10	Electives	6
		Total.....	10
FOURTH YEAR			
FALL TERM	Credit Hours	SPRING TERM	Credit Hours
Trial Practice Court.....	2	Trial Practice Court.....	2
Electives	8	Electives	8
Total.....	10	Total.....	10

GRADUATE PROGRAM

DEGREES OF MASTER OF LAWS AND DOCTOR OF JURIDICAL SCIENCE

The administration of justice under law is a matter so vast and complex that some graduates feel the need for further study in order to broaden and deepen their understanding of the law. Others desire to extend their study into rapidly developing specialized fields. Graduate instruction, leading to the degree of Master of Laws, is therefore offered to enable qualified students to attain one or both of these objectives.

The degree of Doctor of Juridical Science is offered for selected students whose aim is to extend still further their studies by pursuing original research in law.

Graduate work is available to evening as well as morning students in order that lawyers in private practice and in government service may engage in advanced study or in original research.

PROGRAMS OF STUDY FOR FOREIGN LAWYERS

Two programs of study are provided to meet the needs of lawyers who come from countries whose legal systems are not based on the English law. For such lawyers, whose aim is to acquire an understanding of our system so that they may work intelligently with its materials and practitioners after returning to their own countries, there is available the degree of Master of Comparative Law. For foreign lawyers, however, who wish to remain in this country to practice law, there is available the degree of Master of Comparative Law (American Practice) with an appropriate program of study. With respect to both programs, the students are not assigned to special classes but work in association with the other students in the regular courses, each student's program being adapted to his individual needs.

NON-DEGREE STUDY: CONTINUING LEGAL EDUCATION

As a result of changes and expansion in various fields of the law many lawyers pursue graduate study in order to keep abreast of current developments. Consequently, an important part of the graduate program is to provide continuing legal education for members of the bar not desirous of becoming degree candidates. The offerings in the field of governmental regulation provide opportunities for specialization. Although third-year and graduate courses are particularly suitable, first-year and second-year courses may be taken in appropriate cases. Members of the bar taking graduate work in this way register as unclassified students.

RESEARCH IN PUBLIC LAW

Research in public law is conducted under the supervision of members of the Faculty. The purpose of this research is to furnish means for training specialists in public law, either as government lawyers or as lawyers representing individuals or corporations in cases in which the Government is a party, and to assist in the analysis, clarification, formulation, and improvement of public law, substantive and procedural.

Candidates for the graduate degrees in the Law School and seniors who are eligible for the degree of Juris Doctor may pursue this work. Other students may be admitted with the special permission of the professor in charge.

REQUIREMENTS FOR THE DEGREES

MASTER OF LAWS

To be recommended for the degree of Master of Laws (LL.M.) the student must have completed a residence period of not less than two terms. Such residence should normally be continuous. All requirements

for the degree must be completed in this Law School and in a period not exceeding two years after registration for work for the degree. The student must have completed with a minimum average of *B* twenty credit hours in courses listed in the law curriculum as graduate courses except that in appropriate cases third-year courses and Torts II—Unfair Trade Practices may be approved for inclusion in the program of study if not previously taken.

MASTER OF COMPARATIVE LAW

The degree of Master of Comparative Law (M.Comp.L.) is for foreign students who intend to return to their countries. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed satisfactorily twenty-four credit hours in approved courses in the curriculum of the Law School or of such other departments of the University as the Faculty of the Law School shall approve.

MASTER OF COMPARATIVE LAW (AMERICAN PRACTICE)

The degree of Master of Comparative Law, American Practice (M.Comp.L.(Am.Prac.)) is for foreign students who intend to remain in this country. To be recommended for this degree the student must have completed a residence period of not less than one academic year. He must have completed twenty-eight credit hours in approved courses in the curriculum of the Law School with a cumulative average of at least *C*.

DOCTOR OF JURIDICAL SCIENCE

To be recommended for the degree of Doctor of Juridical Science (S.J.D.) the student must have completed a residence period of not less than one academic year. He must have pursued a course of study and research designated by his consultative committee and approved by the Committee on Graduate Studies. At the conclusion of his first year of residence, or at such other time as the Committee on Graduate Studies may set, the candidate must pass an oral examination in those fields of study selected by the consultative committee. This examination shall be conducted by the consultative committee and such other members of the Faculty and qualified experts from other research institutions as may be selected by the Committee on Graduate Studies.

Not later than the date specified in the University calendar the candidate must submit to the Dean one typewritten original and two legible and complete carbon copies of his dissertation in its final form. The dissertation must contain a summary of from 2,500 to 3,000 words inserted as an appendix. An additional original typewritten copy of this summary must be submitted for publication. To be acceptable the dissert-

tation must, in the opinion of the examining committee, constitute a substantial contribution to the field of law concerned and be suitable for publication. Additional information will be supplied by the Chairman of the Committee on Graduate Studies.

The summaries of accepted dissertations will be printed in a volume forming a number of the University BULLETIN. The successful candidate for the doctorate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

COURSES OF INSTRUCTION

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The courses of instruction listed below are subject to change. The University reserves the right to withdraw any course announced.

The number which precedes the name of a course indicates the term in which that course is offered. An odd number indicates that the course is offered in the fall term; an even number, that it is offered in the spring term; and a double number (e.g., 241-42), that it begins in the fall and continues in the spring term. The letter "x" following an odd course number (e.g., 141x) indicates that the course, normally offered in the fall term, is given in the spring term. The letter "x" following an even course number (e.g., 112x) indicates that the course, normally offered in the spring term, is given in the fall term.

First-year courses are numbered from 101 to 200; second-year courses, from 201 to 300; third-year courses, from 301 to 400; and graduate courses, from 401 to 500.

The number of hours of credit given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving two hours of credit each term is marked (2-2), and a term course giving two hours of credit is marked (2).

Morning classes begin at 9:10 A.M. Evening classes begin at 5:50 P.M.

FIRST YEAR

101 *Legal Method and Legal System* (4) Fryer, Benson, Weston, Mayo, Cunningham

Introduction to study of substantive and procedural law dealing with basic concepts. Training in method and technique of case law, based upon modern records in state and federal cases, followed by practice in the use of law books and legal writing. Importance of language in law, legal reasoning, statutory interpretation, and use of precedents, under the doctrines of stare decisis, law of the case, and res judicata. Background development of Anglo-American legal system; organization of the judiciary and the bar, stressing enforcement of ethical standards. Fryer and Benson, *Cases on Legal Method, Cases on Legal System*, 2 vol. ed. 1949. Morning and evening sections. (Also offered 1953 summer term.)

Law 101x, same as 101, offered spring term. Morning and evening sections.

111-12 *Contracts* (4-2) Mayo, Jones

Scope of protection accorded contracts; specific performance of contracts other than land transactions; damages, restitution. Mutual assent: offer and acceptance, misunderstanding, mistake, reformation, parol evidence rule. Consideration, third party beneficiaries, assignments, conditions, Statute of Frauds. Morning and evening sections.

- 123 *Criminal Law and Procedure* (4) Murdock, Cooper
Origin and purposes of criminal law; elements of criminal liability; mental disorders; solicitation, attempt, and conspiracy; crimes against the person, against property, and against both; statutory offenses; criminal procedure, with consideration of Federal Rules of Criminal Procedure. Morning. (Also offered 1953 summer term.)
Law 123x, same as 123, offered spring term. Evening.
- 133 *Personal Property* (2) Weston, Cunningham, Jones
Concepts of property and ownership; possession; finding; bailment; liens and pledges; acquisition of title by bona fide purchase, adverse possession, accession, confusion, judgment, satisfaction of a judgment, and gift. Morning and evening sections.
Law 133x, same as 133, offered spring term. Evening.
- 138 *Real Property* (4) Benson, Cunningham
Historical background of estates and conveyances; possessory estates; concurrent estates; natural rights; easements, profits, and licenses; adverse possession and adverse user. Morning. (Also offered 1953 summer term.)
Law 138x, same as 138, offered fall term. Evening.
- 142 *Torts I* (4) Merrifield
Intended and unintended interference with the person or tangible things, defamation of the person, malicious prosecution. Morning and evening sections.
- 150 *Constitutional Law* (4) Collier, Mallison
Historical introduction, judicial approach and methods, doctrine of the separation of powers, powers of the National Government; the federal system and relation of federal and state courts. Morning and evening sections.

SECOND YEAR

- 205 *Civil Procedure* (4) Fryer
Function and composition of pleadings, including their relation to proof. Emphasis is upon reforms, as exemplified by modern code provisions and the Federal Rules of Civil Procedure. Morning and evening sections. (Also offered 1953 summer term.)
- 208 *Evidence* (4) Fryer, Weston
Functions of court and jury; witnesses; hearsay, opinion, and circumstantial evidence; proof of authenticity and contents of writings. Morning and evening sections. (Also offered 1953 summer term.)
- 210 *Conveyances and Wills* (4) Cunningham
Land contracts, conveyances, mortgages, recording; formation and revocation of wills, testate and intestate succession. Morning and evening sections. (Also offered 1953 summer term.)
- 214 *Legal Accounting* (4) Fey
A study of elementary accounting principles and techniques; application of accounting principles to legal problems. Morning.
Law 214x, same as 214, offered fall term. Evening.

- 218 *Local Government Law* (2) Mallison
Types and objectives of municipal, county, and special purpose local governmental units; intergovernmental relations; original organization and changes; lawmaking by local bodies; community planning and development; legal responsibility of local governmental units. Evening. (Also offered 1953 summer term.)
- 223 *Domestic Relations* (2) Mallison
Marriage, annulment, and divorce; rights of husband and wife; rights of parent and child; infants. Morning and evening sections. (Also offered 1953 summer term.)
- 247 *Commercial Paper* (4) Orentlicher
Bills of exchange, promissory notes and checks, especially under the Negotiable Instruments Law. Morning and evening sections. (Also offered 1953 summer term.)
- 253 *Torts II—Unfair Trade Practices* (4) Weston
Unfair trade practices at common law and under state and federal statutes. Trade-marks and trade names, including Trade-Mark Act of 1946. Misappropriation. False advertising at common law. Federal Trade Commission jurisdiction over misrepresentation practices. Lotteries and premiums. Disparagement of competitor's goods and business methods. State Fair Trade Acts (resale price maintenance). Price discrimination (State and Federal Robinson-Patman Act). State statutes prohibiting sales below cost. Inducing breach of contract. Commercial bribery. Miscellaneous business torts constituting unprieviled interferences with advantageous business relations. Oppenheim, *Unfair Trade Practices, Cases, Comments and Materials* (1950). Morning and evening sections.
- 258 *Commercial Transactions* (4) Orentlicher
The law relating to the sale and distribution of goods, and to the security financing devices utilized in this connection, with particular attention to the effect of uniform laws. Morning and evening sections.
- 261 *Agency-Partnership* (4) Cooper
Master and servant (status of agent), respondeat superior, nature of agency relation; actual authority, parties (disclosed and undisclosed principal), unauthorized transactions, notice, notification. Formation of partnerships, partnership property, rights and duties of partners inter se, nature and enforcement of the partnership obligation, dissolution of the partnership, actions by and against partners. Morning and evening sections.
- 270 *Corporations* (4) Cooper, Weaver
Legal requirements as to contributions of capital; powers and rights of corporations, corporate officials, and shareholders. Morning and evening sections.

THIRD YEAR

- 303 *Administrative Law* (4) Davison
The position of the administrative process in the separation of powers, including the status of administrative personnel, administrative hearings, judicial scrutiny of administrative action, discretion, and rule-making—particularly as relating to federal administrative agencies.

Davison and Grundstein, *Cases on Administrative Law*. Evening.
(Also offered 1953 summer term.)

Law 303x, same as 303, offered spring term. Morning.

309 *Suretyship* (2)

Orentlicher

The law of suretyship, especially in the context of accommodation credit and commercial and financial practices, with attention also to informal and consensual suretyship relations and the place of suretyship principles in the solution of legal problems generally. Morning

312 *Restitution* (2)

Orentlicher

Remedies at law and in equity for restitution of benefits conferred, especially as based on the concept of unjust enrichment. Morning
(Also offered 1953 summer term.)

Law 312x, same as 312, offered fall term. Evening.

315 *Conflict of Laws* (4)

Study of cases involving foreign elements; principles of jurisdiction and limitations upon its exercise; procedure, torts, workmen's compensation, contracts, property, family law, administration of estates, business associations. Cheatham, Goodrich, Griswold, and Reese, *Cases on Conflict of Laws*, 3d ed. Morning. (Also offered 1953 summer term.)

Law 315x, same as 315, offered spring term. Evening.

317x *Creditors' Rights* (4)

Jones

Remedies of unsecured creditors: judgments, fraudulent conveyances, creditors' agreements, equity and statutory receiverships, and bankruptcy. The general approach is that of law administration. Evening.

321-22 *Current Decisions* (2-2)

Davison, Weaver

Required of, and limited to, members of the student staff of the Law Review. Time to be arranged.

324 *Federal Jurisdiction* (2)

Cooper

Constitutional and statutory origins of federal courts, cases arising under the laws and the Constitution, diversity of citizenship, jurisdictional amount, removal procedure and jurisdiction, limitations on federal jurisdiction, state and federal conflicts, substantive law applied by federal courts. McCormick and Chadbourne, *Cases on Federal Courts*. Evening.

Law 324x, same as 324, offered fall term. Morning.

326 *Insurance* (2)

Mayo

The insurance device in life, property, and other risks. (Not offered in 1953-54.)

327x *International Law* (4)

Murdock

Origin, nature, sources and authority; the international community, recognition, organization (the United Nations); nationality, territory, jurisdiction; treaties; diplomatic and consular agents; state responsibility and international claims; pacific settlement of disputes. Morning and evening sections.

329 *Labor Law* (4)

Merrifield

Laws applicable to strikes, picketing, boycotts, etc.; organization and representation of employees; negotiation of collective bargaining contracts; inter-union and intra-union relations; settlement of wage disputes (arbitration, mediation, conciliation). Cases, legislative and administrative materials, readings. Morning and evening sections.

333 *Legislation* (4)

Mallison

Justiciable aspects of the legislative process; forms and types of statutes; principles of statutory interpretation, structure and drafting. Evening.

335-36 *Trial Practice Court* (2-2)

Laws, Morris, Craighill,

Kirkland, Edgerton, Myers, Marshall, Jackson,

Herrick, Monk, Newmyer, Kendrick, Skinker

To be taken in the senior year. Prerequisite: Law 295 and 298. Morning and evening sections.

337x *Future Interests* (2)

Benson

Future interests at common law and under modern statutes, construction of limitations, powers of appointment, rule against perpetuities. Evening. (Also offered 1953 summer term.)

340 *Constitutional Interpretations* (4)

Collier

Advanced course in constitutional law. The Constitution and constitutional tradition; doctrines of limited government, separation of powers, implied limitations on legislative power, and significance of "due process" in current constitutional developments. Introduction to comparative constitutional law, with studies in the constitutional law of selected states of the Union. Evening.

345 *Substantive Patent Law* * (2)

Harris

Substantive patent law; patentability; revision, use, and enforcement of patents. Evening.

346 *Patent Office Practice* * (2)

Henry

Rules of practice; appeal and interference procedure. Evening.

349-50 *Patent Trial Practice Court* * (2-2)

Henry, Bailey

Practice before the United States Court of Customs and Patent Appeals, the District Court of the United States for the District of Columbia, and the Court of Appeals for the District of Columbia involving suits under Section 4915 of the Revised Statutes; practice before the United States courts in infringement. Evening.

This course may be elected instead of Law 335-36 to satisfy the Trial Practice Court requirement. Both courses may not be counted toward a degree.

351x *Public Utilities* (2)

Fryer

Regulation by governmental agencies concerned with power fields, dealing principally with services required and determination of rate of return based on "net investment" doctrine. Study of techniques employed in original proceedings and nature of judicial review. Ex-

* Patent law students should take Law 345 and Law 349 concurrently in the fall term and Law 346 and Law 350 concurrently in the spring term. Law 349-50 may be taken only by students who are taking or have taken Law 345.

amination of policies underlying national controls over distribution of electricity and natural gas. Evening.

365 *Government Contracts I (2)*

McIntire

A consideration of the basic power of the Federal Government to enter into contracts; the nature and construction of such contracts; normal and war or defense powers aspects of Government procurement, including administrative and legislative policy and procedure; forms of contracts; standard clauses; advertised bid procedure problems; negotiated contracts; modification of contracts; remedies on contractual claims. Evening.

366 *Government Contracts II (2)*

McIntire

Special problems in Government contracts, including adjustments and relief; stand-by contracts for mobilization of industrial resources; special relief provisions; efforts toward unified procurement activity; procedure for prosecuting claims under Government contracts; attempts at price, cost, or profit control; termination. Evening.

373 *Taxation (2)*

Collier

Introductory course on basic concepts of federal tax system. Attention given to state inheritance and income taxes. Problems of jurisdiction to tax, construction of tax statutes, methods of judicial review of administrative actions in the tax field, modern excise taxes on business concerns. Magill and Maguire, *Cases on Taxation*, 4th ed. Morning.

Law 373x, same as 373, offered spring term. Evening.

374x *Taxation—Federal Estate and Gift (2)*

Fey

Specific problems in federal estate and gift taxation, with consideration of relevant state inheritance tax problems. Evening.

375-76 *Taxation—Federal Income (2-2)*

Fey, Driscoll

Federal income taxation, including excess profits; imposition and computation problems. Evening. (Also offered 1953 summer term.)

Law 375x (4), same as 375-76 (2-2), offered spring term. Morning.

378 *Federal Anti-Trust Laws (4)*

Restraints of trade at common law. Public policy under Sherman Anti-Trust Act of 1890 and Federal Trade Commission and Clayton Acts, including mergers, consolidations, and monopoly. Loose association activities (price-fixing agreements, trade associations, international cartels). Specific practices such as resale price maintenance, delivered price systems, exclusive arrangements and tying devices, trade boycotts. Patents and copyrights under anti-trust laws. Remedies. Oppenheim, *Cases on Federal Anti-Trust Laws*. Evening.

381 *Trusts (4)*

Weaver

Creation, elements, administration, enforcement, termination. Liabilities to and of third persons. Resulting and constructive trusts. Bogert, *Cases on Trusts*, 2d ed. Morning and evening sections. (Also offered 1953 summer term.)

383 *Military Law and Jurisdiction*

Wiener

Sources of military jurisdiction; military law proper, including court-martial jurisdiction and procedures before, during, and after trial; military government; martial law; laws of war and treatment of offenders. Evening.

- 386 *Aviation Law* (2) Rhyne
 Procedure before Civil Aeronautics Board; legal problems arising in connection with air transportation and airports, international conventions and organizations. Evening.

- 388 *Admiralty* (2) Colclough
 Federal and state jurisdiction; jurisdiction over waters, craft, contracts, torts, crimes, in equitable matters, etc.; laws applicable to maritime workers and maritime liens. Sprague and Healy, Cases on Admiralty. Evening.

- 391 *Government Regulation of Communication Media* (2) Mayo
 Examination of the legal doctrine relating to free speech in the channels of mass communication (newspapers, motion pictures, radio, and television); analysis of the control exercised over the content of these media by government, private owners, and other interests; appraisal of the comparative utility of various regulatory techniques for implementing government policies affecting these media. Evening.

GRADUATE COURSES

- 403 *Administrative Law Seminar* (2) Davison
 Group study of specific problems in administrative law. Evening.
 Law 403x, same as 403, offered spring term. Evening.

- 405 *Legal Problems in Modern Methods of Warfare* (2) Mallison
 The legal aspects of modern methods of exercising coercion (political, psychological, and military); the conduct and regulation of hostilities; the special problems of atomic, bacteriological, and chemical weapons; war crimes. Evening.

- 408 *Regulation of Securities and Securities Markets* (2) Kroll
 A study of state and federal laws governing the offering and distribution of securities to the public by corporate issuers and others, the regulation of securities markets, and the rights and liabilities of purchasers under such statutes. Particular emphasis will be given to statutes administered by the Securities and Exchange Commission. Evening.

- 410 *Legal Operation of Modern Social Legislation* (2)
 Philosophy, constitutional theory, and legal principles in the operation of the developing socio-economic programs for security of the individual, including Workmen's and Unemployment Compensation, Public Assistance, and related programs. (Not offered in 1953-54.)

- 412 *Recent Legal Developments in International Relations* (2) Czyzak
 A study of selected current problems, including the most significant provisions of international trade agreements, particularly the General Agreement on Tariffs and Trade; a review of international commodity problems; and an examination of the legal doctrine relating to the Coal and Steel Community (Schuman Plan). Evening.

- 413 *Labor Law Practice* (2) Merrifield
Practices and procedures in voluntary arbitration cases and before federal agencies, such as National Labor Relations Board, Wage and Hour Division, Federal Mediation and Conciliation Service, and Wage Stabilization Board. Evening.
- 415 *Comparative Law* (4) Murdock
Historical and comparative study of the fundamental principles of the Roman and modern Civil Law (law of South and Central America and most of continental Europe); comparative study of selected legal institutions to exemplify significant differences between the civil and common law systems in source materials and in methods and approaches to the solution of legal problems. Evening.
- 417 *Legislative Drafting* (2) Zinn
Advanced instruction and practice in legislative drafting. Evening.
- 421 *Constitutional Law Seminar* (2) Collier
Group study of contemporary problems in constitutional law. Evening.
- 427 *World Law* (2) Czyzak
The United Nations as a basis of reference for a study of international law. Evening.
- 430x *International Law Seminar* (2) Murdock
Group study of contemporary problems in international law. Evening.
- 432 *Comparative Law Seminar* (2) Murdock
Group study of contemporary problems in comparative law. Evening.
- 435 *Jurisprudence* (4) Collier
History of jurisprudence; schools of jurists, particularly the nineteenth century schools; sociological jurisprudence; theories of justice; the nature of law; law and morals; law and the state; the scope and subject matter of law; sources and forms of law; the traditional element; analysis of general legal concepts. Morning. (Also offered 1953 summer term.)
- 437x *Monetary Law* (2) Dach
Introductory survey of the provisions of public law by which money is administered, relating particularly to the Federal Reserve System; the legal character of money and of monetary obligations; legal tender; the "dollar-for-dollar" rule and its limitations; protective clauses (gold, commodity, and index clauses). Particular emphasis will be given to the law relating to foreign money; money of contract; money of payment; conversion; rate of exchange; conflict of laws problems. Evening.
- 451x *Trade Regulation Seminar* (2) Fey
Group study of current problems relating to unfair trade practices and federal anti-trust laws. (Not offered in 1953-54.)
- 461 *Corporate Taxation Seminar* (2) Fey
Group study of special problems in corporate taxation. Evening.
- 462 *Federal Taxation Seminar* (2) Fey
Group study of special problems in federal taxation. Evening.

466 *Estate Planning Seminar (2)*

Weaver

Consideration of the problems involved in planning an effective and economical gift distribution of property interests. Typical estates, both large and small, will be considered in the light of the results commonly sought by the donor and the techniques and restrictions suggested by the law of property, wills, future interests, insurance, and federal and state taxation. Evening.

468 *Labor Law Seminar (2)*

Merrifield

Group study of contemporary problems in labor law. Evening.

DEGREES CONFERRED

BACHELOR OF LAWS

May 28, 1952

Francis Girault Addison III B.S. 1947, Washington and Lee University	D.C.	William Grobman B.S. in E.E. 1944, Rutgers University	N.J.
Theodore Daniel Agayoff A.B. in Govt. 1949, The George Washington University	Conn.	Charles Campbell Hanley Walter Daniel Hansen A.B. 1950, The George Washington University	N.Y. D.C.
Norton Ansher B.F.E. 1949, The George Washington University	N.Y.	Norman Harold Heller A.B. in Govt. 1950, The George Washington University	Ms.
David Applestein A.B. 1949, The George Washington University	D.C.	Richard Work Hill Robert Douglas Hoffman Harry Roe Hughes B.S. 1949, University of Maryland	Va. Md. Md.
Morton Weiss Bachrach B.S. 1947, Roanoke College	Va.	Maury Isaac Hull A.B. 1942, Southwestern University	Va.
Walter Harvey Beardmore Carl William Belcher A.B. 1948, Duke University	Md. Ky.	A.M. 1940, The George Washington University	Iowa D.C.
Hyman Berman A.B. in Govt. 1949, The George Washington University	N.Y.	Martin John Jenkel, Jr. James Mitchell Jones Marcia Kaplan A.B. 1946, University of Michigan	D.C. Md.
John Aloysius Berry Norman Blumenkopf A.B. 1941, Brooklyn College	Ill. D.C.	Frances Anne Kelly A.B. 1944, University of Chicago	Md.
Abraham Bogorad B.S. 1941, College of the City of New York	N.Y.	John Bonaventure Kenkel A.B. 1949, Colgate University	W.Va.
Paul Joachim Brand B.S. 1941, New York University	Va.	Robert Martin Kilgore B.S. 1947, Georgetown University	D.C.
Donald Arthur Brown A.B. 1949, The George Washington University	D.C.	Peter Dionysios Koutsandreas B.C.E. 1948, The George Washington University	D.C.
Katherine Donnell Buchanan A.B. 1936, Tulane University	Md.	Louis Francis Kreek, Jr. B.S. 1948, Massachusetts Institute of Technology	N.Y.
Christopher Sudlow Clayton Donald Sidney Cohen B.S. in M.E. 1947, University of Maryland	D.C. D.C.	Richard Thomas Laughlin B.S. in Ch.E. 1949, University of Notre Dame	N.Y.
Robert Joseph Connerton B.S. in B.A. 1949, University of Scranton	Pa.	Alfred Bernard Levine B.S. in E.E. 1946, Cornell University M.E.E. 1949, Rensselaer Polytechnic Institute	Va. Ind.
Paul Rawson Conrad B.S. 1949, University of Kansas	Kans.	Louise London A.B. 1947, Vassar College	Ind.
Charles Russell Davis Roger Joseph Drew B.S. 1948, University of Wisconsin	Tex. Wis.	Herold Homer Losche A.B. 1935, Hanover College	Wash. D.C.
Baird Ellis Emmons A.B. 1941, University of Nebraska	Calif.	Henry Willard Lundgren James Edward Mack A.B. 1943, The George Washington University	Pa.
Milton Mortimer Field B.S. in E.E. 1948, University of Nebraska	N.Y.	Nicholas Malinchak A.B. 1949, University of Pittsburgh	Va.
Jules Verne Fink A.B. 1949, The George Washington University	D.C.	William Grady Malone B.S. 1941, Louisiana University	W.Va.
Walter Naonaki Fuchigami A.B. 1950, Colorado State College of Education	Va.	Charles Lance Marshall, Jr. B.S. in E.E. 1949, Purdue University	Mo.
Robert Bernard Gerhardt B.S. in M.E. 1947, Northwestern University	Md.	Robert William Martin A.B. 1949, Southwest Missouri State College Richard Bingham Mathias	Pa.

George Joseph Maurer	Pa.	Gerald Earl Rudman	Maine
Sylvester John McCloskey	Pa.	A.B. 1949, University of Maine	
A.B. 1949, The George Washington University		Helen Janet Schwartz	D.C.
John Kinsey McCulloch	D.C.	A.B. 1948, The George Washington University	
B.S. in Eng. 1950, The George Washington University		Nelson Hursh Shapiro	Md.
Samuel Meerkreebs	Ohio	B.E. 1948, Johns Hopkins University	
B.C.E. 1942, University of Toledo		Richard Fuller Shryock	Md.
David Ralph Mellen, Jr.	D.C.	A.B. 1949, University of North Carolina	
Katherine Rebecca Milby	Va.	George Klepfer Spann	Md.
B.S. 1937, Longwood College		James Elwood Stauffer	Calif.
Edwin Cyrus Miller	Pa.	A.B. 1941, Franklin and Marshall College	
David Lewis Moore	D.C.	James Reist Stoner	Pa.
A.B. 1946, Harvard University		B.S. 1949, Franklin and Marshall College	
Jorge Morales-Yordan	Puerto Rico	William Franklin Thomas	Oreg.
A.B. 1948, University of Puerto Rico		B.S. 1948, University of Oregon	
Leroy Moran	Va.	Murry Tillman	N.Y.
A.B. 1949, Lynchburg College		A.B. 1944, Brooklyn College	
Priscilla Margaret Naecker	D.C.	Joseph Thomas Valenzi	Va.
Ralph Woodlind Parker	Md.	Washam Davies Warmack	D.C.
A.B. 1949, Georgetown College		George Cabot Weate	D.C.
Robert John Patch	D.C.	A.B. 1949, University of Maryland	
B.S. 1948, University of Michigan		Edward Webster	Md.
William Darby Payne	D.C.	B.S. 1942, University of Maryland	
A.B. 1949, University of Maryland		Milton Weissman	N.Y.
Guy Nicholas Peremich	Md.	B.C.E. 1940, New York University	
A.B. 1949, University of Notre Dame		Simon Louis Weker	Mass.
John Peto	N.Y.	A.B. 1944, Harvard University	
B.S. 1947, College of the City of New York		E.J.M. 1948, Boston Teachers College	
Walter Alfred Piezak	Pa.	Fred Lee Witherspoon, Jr.	Md.
A.B. 1949, Wilkes College		B.S. in M.E. 1941, University of Maryland	
Col Donald Quarforth	S.D.	Jay Warren Wolfenson	D.C.
B.C.E. 1946, University of Virginia		A.B. 1948, The George Washington University	
Alice Marion Rand	Md.	Harry Eugene Wood	S.C.
A.B. 1948, Wellesley College		Wilbur Henry Ziehl	Wis.
William Elmer Recktenwald	Va.	A.B. 1950, The George Washington University	
B.S. in M.E. 1948, Purdue University		Chester Anthony Zyblat	Ill.
Samuel Rayson Ross	Pa.	A.B. 1950, DePaul University	
A.B. 1949, University of Pittsburgh			
A.M. 1944, Ph.D. 1931, Columbia University			
Donald Carvar Roylance	Md.		

November 11, 1952

Edward Christensen Allen	Maine	Earl Christensen	Mont.
B.S. 1948, Cornell University		A.B. 1943, University of Montana	
Alva Thomas Barber	Pa.	Joseph Anthony DeGrandi	Conn.
B.S. 1941, Susquehanna University		B.S. 1949, Trinity College	
Robert Dean Byrnes	Mo.	M.S. 1949, The George Washington University	
B.S. 1949, University of Missouri		Theodore John DiLorenzo	Conn.
Arthur Gooding Barnhart	D.C.	A.B. 1940, Trinity College	
A.B. 1949, The George Washington University		Richard Charles Donnelly	D.C.
Lois Miller Berg	Calif.	Elizabeth Anne Edward	Md.
A.P. 1950, The George Washington University		A.B. 1943, Trinity College	
William Hunter Bergman	Md.	Herbert Joseph Evers	N.Y.
B.S. in F.S. 1948, Georgetown University		B.M.E. 1947, Cooper Union	
Earl William Borchertling	Utah	Melvin Medford Fenichell	N.Y.
A.B. 1949, The George Washington University		A.B. 1943, Dartmouth College	
Armander Dewey Calhoun, Jr.	D.C.	Martin Meyer Fine	Pa.
A.B. 1947, Harvard University		B.S. 1948, Bucknell University	
Angene Rago Campana	N.Y.	Frank Marshall Fisher	Md.
A.B. 1942, Pennsylvania State College		B.S. 1943, United States Coast Guard Academy	
	Pa.	Maxwell Charles Freudenberg	Md.
		B.S. in B.E. 1948, University of Illinois	

Claude Funkhouser	Md.	William David Palmer	Va.
B.S. in M.E. 1941, University of Missouri		B.S. 1943, United States Coast Guard Academy	Pa.
Richard Denroy Gardner	Utah	Edward Andrew Potts	Pa.
B.S. 1949, Utah State Agricultural College		A.B. 1940, University of Michigan	
Harold Herman Greene	Md.	Joseph Edward Ruzkiewicz	Mo.
William Henry Hunsbarger	Va.	B.S. in E.E. 1948, University of Pittsburgh	
A.B. 1947, University of Maryland		Mary Ann Sames	Va.
George Harold Harbaugh, Jr.	D.C.	A.B. 1947, University of Missouri	
A.B. 1948, Rutgers University		William John Scheiback	Wis.
Allen Myles Haynes, Jr.	N.C.	B.S. in E.E. 1946, University of Wisconsin	
A.B. 1949, University of North Carolina		Raymond Alois Servais	N.D.
Paul Roger Holmes	N.Y.	A.B. 1950, The George Washington University	
B.M.E. 1950, Rensselaer Polytechnic Institute		William Edward Shenko	W.Va.
John Brevard Jacob	Va.	B.S. 1950, North Dakota Agricultural College	
Edmund Michael Jaskiewicz	Conn.	Elizabeth Wise Shugart	Va.
B.S. in Eng. 1947, University of Connecticut		A.B. 1947, Ohio State University	
Vincent James Jennings	Va.	Clarence Wilbur Spauls	Pa.
A.B. 1948, Yale University		B.S. in Eng. 1945, Yale University	
Murray Katz	N.Y.	John Paul Spock	N.Y.
B.Ch.E. 1947, College of the City of New York		A.B. 1950, University of Maryland	
Alexander Young Ha Kim	Hawaii	Stefan Martin Stein	Va.
A.B. 1949, University of Hawaii		A.B. 1948, Cornell University	
William George Kenold	Ohio	Nelson Alexander Stitt	Ind.
B.E.E. 1949, Cornell University		A.B. 1948, University of Pittsburgh	
Jack Larson	Mich.	Albert Donald Stolzy	Mass.
A.B. 1942, Princeton University		B.S. in E.E. 1949, Rose Polytechnic Institute	
A.M. 1947, University of Michigan		Ralph Hall Sullivan	Pa.
Joseph John Lelesash	Pa.	B.B.A. 1943, Boston University	
B.S. 1941, Pennsylvania State College		M.S. 1949, Simmons College	
Joseph Levinson	Ill.	Anthony Joseph Turchetti	Conn.
B.S. in E.E. 1949, University of Illinois		B.S. in Aero. Eng. 1945, M.S. in M.E. 1947, Pennsylvania State College	
James William Love	Pa.	Edward William Urban	Hawaii
David Daniel Lowman	Wash.	A.B. 1950, Elmhurst College	
A.B. 1949, Stanford University		John Takeji Ushijima	Nev.
Jenny Ladeler Makhman	N.Y.	A.B. 1950, Grinnell College	
A.B. 1947, Smith College		James Leo Wadsworth	D.C.
Andrew Marchison	N.J.	A.B. 1948, Brigham Young University	
B.S. 1950, Georgetown University		Robert Bellarmine White	D.C.
Louis Francis Mazza	Md.	Courtney Whitney, Jr.	N.Y.
Helen Mary McCarthy	Mass.	A.B. 1949, Yale University	
A.B. 1942, Regis College		Leo Wilder	Hawaii
Melvin Joseph McGowan	Ill.	B.M.E. 1949, College of the City of New York	
A.B. 1949, Coe College		Elias Perfecto Yadao	D.C.
John Edwin McRae	Mich.	A.B. 1949, University of Hawaii	
B.Ch.E. 1948, University of Detroit		David Young	Maine
Melvin Eugene Miller	Pa.	B.M.E. 1949, Cooper Union	
Matthew Sharp Muir, Jr.	Hawaii	John Thomas Young	
B.B.A. 1944, University of Washington		A.B. 1950, University of Maine	
John Joseph Murray, Jr.	Mass.		
B.S. 1949, Boston College			

February 23, 1953

Frank Leo Ahern, Jr.	D.C.	Antonia Handler Chayes	Va.
B.S. in M.E. 1944, Cornell University		(With distinction)	
Richard Norman Baylison	N.J.	A.B. 1949, Radcliffe College	D.C.
Otto Edward Burkland	Md.	Enchid Chu	Va.
A.B. in Govt. 1951, The George Washington University		Raymond Dykes Clark	Pa.
Richard Francis Broz	Wash.	B.S. 1948, University of California at Los Angeles	
Francis Henry Burns	Pa.	John Daniel Connelly	
John Joseph Casey	Pa.	B.S. 1950, College of the Holy Cross	

Joseph John Connerton B.E.E. 1949, Catholic University of America	Pa.	John Joseph O'Connell Stanley Wilhelm Petersen A.B. 1942, The George Washington University	Md. N.Y.
Arthur Coppel A.B. 1949, University of Virginia	N.Y.	Robert Earl Pulfrey B.S. 1937, Jamestown College	Va.
William Wood Craddock Armon Davis Acheson Crawford B.S. 1949, United States Naval Academy	Md. Md.	Robert Russell Reque Donald Jenkins Rich Alvin Joseph Riddles B.E.E. 1949, Catholic University of America	D.C. Md. Pa.
Wilbur Chamberlain Davis A.B. 1950, University of Maryland	Md.	Robert Lorain Rissler A.B. 1947, Shepherd College	W.Va.
Benjamin Franklin Dean A.B. 1950, The George Washington University	D.C.	Irvin John Ritterbusch A.B. 1950, University of Maryland	Md.
John Parker Dodge A.B. 1949, Johns Hopkins University	Md.	Frank Colner Roller B.S. 1949, University of Arizona	D.C.
William Stephen Dorman B.S. 1948, Worcester Polytechnic Institute	Mass.	William Albert Rooney John Wesley Roten Thomas Hale Russell A.B. 1949, Harvard University	Wash. W.Va. Va.
John Emerson Forry B.S. in M.E. 1939, Oklahoma Agri- cultural and Mechanical College	Va.	Charles Patrick Ryan Charles William Smith A.B. in Govt. 1951, The George Washington University	Pa. Va.
Jordon Franklin B.S. 1946, Worcester Polytechnic Institute	Mass.	William Donald Soltow, Jr. B.M.E. 1948, Rensselaer Polytechnic Institute	Fla.
Melvin Myron Goldenberg B.M.E. 1949, Catholic University of America	D.C.	Frank James Soucek B.F.E. 1948, The George Washington University	Va.
David Isadore Haberman Roger Hansel	Md. D.C.	Harold Eugene Stambaugh B.S. 1948, University of Pennsylvania	Pa.
Eugene Gregory Horsky B.S. 1948, B.C.E. 1949, Rensselaer Polytechnic Institute	N.Y.	John Stephens A.B. 1946, The George Washington University	Fla.
Robert Bruce Hughes, Jr. A.B. 1948, University of Cincinnati	Va.	Patrick Gerald Sullivan B.S. in M.E. 1940, College of Mines Metallurgy, Texas	Tex.
Haron Herach Jangochian A.B. 1949, Clark University	Mass.	Leonard Summer B.S. 1951, M.S. 1958, College of the City of New York	N.Y.
Harold George Jarcho B.S. in E.E. 1940, Rhode Island State College	R.I.	George Morito Takane A.B. 1950, University of Hawaii	Hawaii
Michael Harris Karr B.S. in E.E. 1937, New York University	Va.	William Hajime Tanaka A.B. 1950, University of California at Los Angeles	Calif.
Jerome Eli Korpeck A.B. 1947, University of Rochester	N.Y.	Frederick Henry Theobald	Ky.
John Greig Lawrence B.S. 1949, United States Naval Academy	Md.	William Bates Thomas A.B. in Govt. 1951, The George Washington University	D.C.
Robert Conrad Lehnert Edwin Lester B.E.E. 1949, Rensselaer Polytechnic Institute	N.Y. N.Y.	Walter Treumann A.B. 1946, Washington University A.M. 1948, University of Chicago	Mo.
Thomas Scott MacDonald B.M.E. 1945, Rensselaer Polytechnic Institute	N.Y.	John Andrew Vance B.S. 1951, Fairmont State College	W.Va.
Carl Franklin McIntyre James Oakes McKee A.B. 1942, Knox College	N.C. Ill.	Sherwin Elihu Weiss A.B. 1950, Brooklyn College	N.Y.
Katsuyo Miho A.B. 1949, University of Hawaii	Hawaii	George Samuel Workinger A.B. 1951, The George Washington University	Md.
Charles Bradford Mitchell Ph.B. 1929, A.M. 1929, Wesleyan University	N.H.	Max Lee Wymore B.S. in Ch.E. 1947, University of Kansas	Kans.
A.M. 1928, Ph.D. 1939, Harvard University		William Harry Yim A.B. 1949, University of Hawaii	Hawaii
Donald Clark Morrell A.B. 1940, Colgate University	Md.		

JURIS DOCTOR

May 28, 1952

Earl Edward Anderson, Jr. B.S. 1940, A.M. 1949, West Virginia University	W.Va.	Andrew Bruce Moritz A.B. 1942, University of South Dakota	S.D.
Bernard Jack Cantor B.M.E. 1949, Cornell University	N.Y.	Mary Katherine Nesbit A.B. 1913, The George Washington University	Kans. D.C.
Thomas Jefferson Dillehay, Jr. B.B.A. 1927, A.M. 1929, Baylor University	Tex.	Frances Louise Nunn A.B. 1948, Vassar College	Wash.
Herbert Emerson Forrest (With distinction) A.B. 1948, The George Washington University	Va.	Barbara Ellen Reardon (With distinction) A.B. 1948, University of Washington	Ala.
Russell Royden Hermann A.B. 1949, Washington State College	Alaska	Robert Sherwood Stubbs II (With distinction) A.B. 1942, University of Alabama	
Leyland Myers Martin B.S. 1934, University of Arkansas	Md.		

November 11, 1952

George James Charles A.B. 1950, University of Pennsylvania	Pa.	William Stuart McLennan B.S. 1947, University of Oregon	Ore.
Sheldon Stanley Cohen (With distinction) A.B. in Govt. 1950, The George Washington University	Md.	Bruce Glueck Philipson B.C.E. 1948, Catholic University of America	D.C.
William Elliott Fuller B.S. 1944, United States Coast Guard Academy	N.J.	A.M. 1950, The George Washington University	D.C.
James Clark Heatherly A.B. 1950, University of Tennessee	Tenn.	James Mahan Roamer, Jr. B.C.E. 1950, The George Washington University	Va.
Daniel Ken Inouye A.B. 1950, University of Hawaii	Hawaii	John Regan Stark A.B. 1938, Cornell University	N.Y.
Harold Jacobstein B.S. 1949, State Teachers College, Indiana, Pa.	Pa.	M.P.A. 1946, New York University	
Lawrence Stanley Levinson B.S. 1948, Rutgers University	N.Y.	George Ward Whitney B.E.E. 1949, Rensselaer Polytechnic Institute	
A.M. 1949, Columbia University			

February 23, 1953

Jack Armore B.S. 1916, College of the City of New York	N.Y.	Nad Alma Peterson A.B. 1950, The George Washington University	Utah
Edna Anne Asper A.B. 1950, University of Pittsburgh	Pa.	Frank Edward Robbins, Jr. B.Ch.E. 1944, Rensselaer Polytechnic Institute	Va. Md.
Isadore David Blumenfeld B.S. in E.E. 1949, Case Institute of Technology	Ohio	Robert Franklin Sagle A.B. 1951, The George Washington University	
Irving Seth Levine (With distinction) B.S., M.S. 1941, Massachusetts Institute of Technology	N.Y.		

MASTER OF LAWS

May 28, 1952

Eva Bertrand Adams A.B. 1918, University of Nevada A.M. 1946, Columbia University LL.B. 1950, Washington College of Law	Nev.	Robert James Annis LL.B. 1951, The George Washington University	Mich.
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Robert Edward Breidenthal B.S. in Ch.E. 1947, University of Oklahoma LL.B. 1949, Washburn Municipal University of Topeka	Md.	James Francis McHale B.S.S. 1936, College of the City of New York LL.B. 1950, Georgetown University	Va.
Mary Sanford Brewster LL.B. 1950, The George Washington University	Va.	Joseph Patrick Murphy A.B. 1949, LL.B. 1950, The George Washington University	Va.
Emser William Cole, Jr. A.B. 1940, LL.B. 1942, University of North Carolina	N.C.	James Edwin Rodgers LL.B. 1950, The George Washington University	Pa.
Paul Max Craig, Jr. B.S. in E.E. 1946, Worcester Poly- technic Institute LL.B. 1950, Georgetown University	Md.	Harvey Milton Spear A.B. 1942, Brown University LL.B. 1948, Harvard University A.M. in Govt. 1940, The George Washington University	R.I.
William McCray Evans LL.B. 1948, Harvard University	Va.	Noah Spurgeon Sweat, Jr. B.S.C. 1946, LL.B. 1949, University of Mississippi	Miss.
John Felix Ghizzoni B.S. 1943, University of Pennsylvania LL.B. 1949, Catholic University of America	Pa.	Michael Joseph Vitale LL.B. 1950, The George Washington University	N.J.
Gordon Francis Harrison Ph.B. 1935, Providence College LL.B. 1941, Georgetown University	R.I.	Frederick Walton, Jr. B.S. 1938, LL.B. 1941, Georgetown University	Md.
Samuel Joseph L'Hommedieu, Jr. B.S. 1949, University of Maryland LL.B. 1951, The George Washington University	D.C.		

November 11, 1952

John Patten Abshire A.B. 1947, University of Chattanooga LL.B. 1949, Vanderbilt University	Tenn.	William John Ostrowski A.B. 1949, Canisius College LL.B. 1951, Georgetown University	N.Y.
Philip Reilly Collins A.B. 1949, LL.B. 1942, Loyola University	La.	Leroy Robinson B.S. 1950, LL.B. 1951, Wake Forest College	N.C.
A.M. 1948, Ph.D. 1950, Georgetown University		Walter Hoersch Sitz B.S. 1946, United States Naval Academy M.S. 1952, Massachusetts Institute of Technology	D.C.
James Gilbert Evans, Jr. A.B. 1947, University of North Carolina	Va.	LL.B. 1952, The George Washington University	
Alan Stanton Hutchinson B.S. 1948, St. Martin's College LL.B. 1951, The George Washington University	Wash.	John Milton Stockton LL.B. 1948, A.B. 1951, University of Alabama	Ala.
Jair Shalom Kaplan A.B. 1946, LL.B. 1948, New York University	N.Y.	Edgar Alban Wren A.B. 1957, University of Scranton LL.B. 1948, Georgetown University	Pa.
Wesley William Langham B.S. 1938, University of Illinois LL.B. 1952, Georgetown University	Ill.		

February 23, 1953

Joseph Alderman LL.B. 1953, Columbia University	N.Y.	Donald Joseph Harrington B.S.E. 1946, University of Michigan LL.B. 1951, University of Detroit	Mich.
Leonard Philip Aries Ph.B. 1950, J.D. 1952, University of Chicago	Ill.	John Joseph Jaskot LL.B. 1951, The George Washington University	Pa.
James Joseph Coyle LL.B. 1948, The George Washington University	Mont.	Sergius Ferris Luboshez B.S.C. 1948, University of London Barrister at-Law 1926, Middle Temple	Md.
George Marsh Flint, Jr. A.B. 1949, Harvard University LL.B. 1945, The George Washington University	Mass.	William Reback LL.B. 1951, The George Washington University	D.C.

MASTER OF COMPARATIVE LAW

May 28, 1952

Zuhair Elias Jwaideh
Licentiate in Law 1944, Baghdad Law
College

Iraq

Manuel Villafior Reyes
LL.B. 1950, University of the
Philippines

Philippines

November 11, 1952

W. Rancap LaGumbay
B.S.C. 1939, Far Eastern University
LL.B. 1951, Manuel L. Quezon School
of Law

Philippines

February 23, 1953

Farquair Nabi Alefi
A.B. 1949, Kabul University

Afghanistan

MASTER OF COMPARATIVE LAW

American Practice

May 28, 1952

Otto John Munz
J.D. 1931, Charles University of Prague

Md.

Alexander Ostrower
LL.M. 1925, University of Warsaw

D.C.

November 11, 1952

Liselotte Bunge Watson
S.J.D. 1933, University of Bonn

Va.

February 23, 1953

Hans Strauss
LL.D. 1925, University of Cologne

D.C.

DOCTOR OF JURIDICAL SCIENCE

May 28, 1952

Walter Kiechel, Jr.
A.B. 1931, University of Nebraska
LL.B. 1949, Yale University
LL.M. 1950, The George Washington
University

Nebr.

Dissertation: "Ascendancy of the Federal Corporation: Forerunner of Socialism?"

STUDENTS REGISTERED IN THE LAW SCHOOL

SUMMER TERM 1952

FALL AND SPRING TERMS 1952-53

Abad, Santos Jose, Jr. Ph.B. 1940, LL.B. 1940, University of the Philippines	A	Philippines	Archer, Glenn LeRoy, Jr. A.B. 1951, Yale University	Md.
Abbot, Frank LeRoy A.B. 1939, Central College	D.C.		Aries, Leonard Phillip Ph.B. 1930, J.D. 1932, University of Chicago	Va.
Abland, Charles David B.B.A. 1952, University of Oklahoma	Okla.		Armore, Jack E. B.S. 1936, College of the City of New York	N.Y.
Aboukheir, Kamal Mohamed LL.B. 1943, Fouad I University, Egypt	D.C.		Arner, Frederick Bates A.B. 1947, Kenyon College	D.C.
Abrams, Morris Melvin B.S. in C.E. 1950, University of Maryland	D.C.		Arseneau, Paul Floecian M.S. in F.E. 1951, Harvard University	D.C.
Abrams, Yehuda Hillel A.B. 1951, The George Washington University	D.C.		Asper, Edna Anne A.B. 1950, University of Pittsburgh	Pa.
Abshire, John Patten LL.B. 1947, University of Chattanooga	Tenn.		Austin, Robert Earl B.S. in E.E. 1950, Pennsylvania State College	Pa.
Adams, William Rule, Jr. A.B. 1950, Stanford University	Md.		B	
Ahern, Frank Leo, Jr. B.S. in M.E. 1944, Cornell University	D.C.		Babinski, Matthew B.S. 1949, Worcester Polytechnic Institute	Va.
Ahern, John Francis B.S. 1949, Lehigh University	Pa.		Bacon, John William B.S. 1950, Cornell University	N.Y.
Albrecht, Harry Lyle LL.B. 1949, University of Michigan	Mich.		Baily, Helen May A.B. 1934, University of Southern California	Calif.
Ali, Faquir Nabi A.B. 1949, University of Afghanistan	Alghanistan		Baily, Ralph, Jr. B.S. 1948, The Citadel	S.C.
Alexander, Charles Patrick A.B. 1950, University of Denver	Colo.		LL.B. 1950, University of South Carolina	
Allen, Edward Claxton A.B. 1940, Gettysburg College	Md.		Bain, Harold Emerson B.S. 1952, University of Alabama	Ala.
Allen, John Edward LL.B. 1950, University of Florida	Fla.		Baker, Carl Wilfred B.S. 1948, Ohio State University	D.C.
Allen, Thorvald Christensen B.S. 1948, Cornell University	Maine		Baker, Walden Lee Baker, Warren Stanton	Pa. Md.
Ames, Walter Donald B.S. 1951, Massachusetts State College	N.Y.		B.S. 1952, University of Maryland	
Ammer, George Joseph A.B. 1945, Pennsylvania State College	W.Va.		Balen, Hadley Pat A.B. in Ed. 1951, Arizona State College	Ariz.
Anderson, Donald George A.B. 1942, University of Nebraska	Nebr.		Balman, Francis Xavier B.S. in F.S. 1948, Georgetown University	Ky.
Anderson, Robert Reynolds, Jr. B.S. 1948, University of Richmond	Va.		Barbee, Ruth Stone Barbee, William Clifford	Md. Va.
Anderson, Walker Eldon B.S. 1951, University of South Carolina	S.C.		A.B. 1949, The George Washington University	
Archibald, Lewis B.S. in B.A. 1947, LL.B. 1951, University of Florida	Fla.		Barber, Alvin Thomas B.S. 1941, Susquehanna University	Pa.
Archibald, Edwin Orin B.S. in E.E. 1948, University of Wisconsin	Wis.		Barger, Herman Haroldyle A.B. 1947, Harvard University	Va.
Archibald, Francis Anthony A.B. 1952, The George Washington University	D.C.		Barnard, Ralph Roger B.B.F. 1945, Cornell University	Ill.
Archibald, William Cornell B.S. 1950, Syracuse University	Pa.		Barnes, Robert Dean B.S. 1949, University of Maryland	Mo.
			LL.B. 1952, The George Washington University	
			Barnhart, Arthur Gooding A.B. 1949, The George Washington University	D.C.

Barsamian, Walter A.B. 1951, Brown University	R.I.	Bergman, William Hunter	MA
Barsigian, Flora Marie A.B. 1952, The George Washington University	Va.	Bergs, Robert Austin B.S. 1945, United States Naval Academy	MA
Barton, Howard A.B. 1948, Syracuse University	D.C.	Berman, Edward Bernard A.B. 1948, A.M. 1950, Ph.D. 1951, Harvard University	D.C.
Baska, John Wilson B.S. 1950, Kansas State College of Agriculture and Applied Science	Kans.	Berman, Stanford Warner B.S. in M.E. 1950, University of Maryland	Md.
Bastacky, Stanley Norman B.B.A. 1951, University of Pittsburgh	Pa.	Berry, Seymour A.B. 1951, The George Washington University	Nev
Bastian, James Harold B.S. 1950, University of Missouri	Mo.	Berson, Harold Ralph A.B. 1949, The George Washington University	N.C.
Batchelder, John Gardner B.S. 1950, University of New Hampshire	N.H.	Best, Lee James A.B. 1918, Duke University	Neb.
Bates, George Marshall B.S. 1948, United States Naval Academy	D.C.	Bierbower, James Joseph B.S.S. 1947, LL.B. 1949, Georgetown University	Utah
Baturin, Floyd Morley B.S. 1951, Lebanon Valley College	Pa.	Bignall, Bliss O., Jr. B.S. 1948, Georgetown University	Va.
Baylinson, Richard Norman Beard, James Ralph B.S. 1949, LL.B. 1951, University of Alabama	N.J. Ala.	Bilger, Donald Earle B.S. 1951, University of Colorado	Min.
Bean, Keith Roger B.S. 1951, University of Utah	D.C.	Bjorklund, Otto Edward A.B. 1949, The George Washington University	Md.
Bear, Frederick James B.S. in B.A. 1947, Miami University	Va.	Bledsoe, Samuel Carter A.B. 1952, Oberlin College	Neb.
Beck, Harold Russell B.S. 1951, Case Institute of Technology	D.C.	Bloch, Robert Oakleigh A.B. 1949, The George Washington University	D.C.
Beckett, William Wade B.S. in C.E. 1948, The Citadel	Fla.	Blondes, Leonard Saul A.B. 1951, Western Reserve University	D.C.
Beckman, Victor Rudolph B.S. 1952, University of Wisconsin	Md.	Blum, Daniel B.M.E. 1944, College of the City of New York	Ohio
Bedo, Alexander Kalnoki D.L.S. 1950, University of Budapest	Md.	Blumenfeld, Isadore David B.S. in E.E. 1949, Case Institute of Technology	Mich.
Begg, Eric Kirk, Jr. B.S. 1949, United States Merchant Marine Academy	Conn.	Boeing, Vincent Roland A.B. 1945, Oberlin College	Md.
Belcher, Carl William A.B. 1948, Duke University	Ky.	Bouvier, Harold Vincent Ph.B. 1949, University of Notre Dame	N.Y.
LL.B. 1952, The George Washington University		LL.B. 1947, Catholic University of America	Pa.
Belkin, Leonard B.M.E. 1950, Cooper Union	N.Y.	Boland, Margaret Anne A.B. 1952, Nazareth College	Calif.
Bell, Iris Yvonne A.B. 1949, Florida State University	Fla.	Bonanni, Louis John A.B. 1952, Wilkes College	Md.
LL.B. 1948, The George Washington University		Boone, James Sanders A.B. 1950, University of California	Va.
Bellinger, Edgar Thomson A.B. 1951, Haverford College	Md.	Bostwick, Robert Edwin A.B. 1948, University of Alabama	
Bennett, William Batchelder B.S. 1951, University of New Hampshire	Va.	Bourne, Hunter Carson, Jr. B.S. in E.E. 1945, B.S. in I.E. 1947, Virginia Polytechnic Institute	Miss.
A.M. 1946, Ph.D. 1941, Louisiana State University		Boydston, Reuben Whittle, Jr. B.S. 1947, Mississippi State College	Pa.
Berardo, Roland Almond John B.S. 1951, M.S. 1952, American University	R.I.	LL.B. 1949, University of Mississippi	
Bere, Louella Miller A.B. 1950, The George Washington University	Calif.	Boyle, William Donald B.S. 1950, Franklin and Marshall College	Md.
Bere, Martin Donald Berger, Richard Edwin B.S. in E.E. 1950, University of Maryland	D.C. D.C.	Braddock, Harry Elton B.S. 1945, United States Naval Academy	Ga.
Bergmann, Robert T. B.S. in E.E. 1943, University of Missouri	Md.	Brannan, Arthur Livingston B.E.E. 1952, Georgia Institute of Technology	D.C.
		Brastow, Jerome Dutyea A.B. 1949, The George Washington University	

Cassity, Donn Edward	Utah	Cohen, Shelton Stanley	Md.
A.B. 1950, The George Washington University		A.B. 1950, The George Washington University	Md.
Casteel, Byron David	Ark.	Cohn, Leonard Earl	N.Y.
A.B. 1945, University of Texas		A.B. 1950, The George Washington University	
M.D. 1941, Harvard University		Cole, Arnold Harvey	Va.
M.Ph. 1949, Johns Hopkins University	N.Y.	B.S. 1949, College of the City of New York	
Caultfield, Donald John		Cole, Don William	D.C.
A.B. 1951, The George Washington University	Pa.	A.B. 1950, University of Illinois	
Caveny, Carolyn Frances	N.Y.	Colley, Benjamin Gilbert	D.C.
A.B. 1951, Pennsylvania State College		B.S. 1948, Union College	Mich.
Cerf, Fred Robert	D.C.	Collins, Garner Fawcett	
A.B. 1949, New York University		Collins, John LeRoy	La.
Chamberlin, Guy Wadsworth, Jr.		A.B. 1950, Michigan State College	
B.S. 1950, Washington and Lee University	Ala.	Collins, Philip Reilly	
Champion, Marvin Aubury		A.B. 1949, L.L.B. 1942, Loyola University	Pa.
B.S. 1944, Alabama Polytechnic Institute	D.C.	A.M. 1948, Ph.D. 1950, Georgetown University	
Chaney, John Lester, Jr.	D.C.	Colombo, Louis Robert	Ill.
A.B. 1953, The George Washington University	Pa.	A.B. 1950, Muhlenberg College	
Chapper, Frank Morris		Comiskey, Emmett Jerome	Md.
Charles, George James	Va.	B.S. in F.S. 1950, Georgetown University	
A.B. 1950, University of Pennsylvania		Comulada, Manuel Paul	Md.
Chaves, Antonia Handler	Va.	B.S. 1947, University of Maryland	
A.B. 1949, Radcliffe College		L.L.B. 1950, Georgetown University	
Chevrier, James Leslie	Hawaii	Connelly, John Daniel	Pa.
B.S. 1950, American University		B.S. 1950, College of the Holy Cross	
Ching, Donald D. H.	D.C.	Connerton, Joseph John	
A.B. 1950, University of Hawaii		B.E.E. 1949, Catholic University of America	Va.
Choi, Sang Ryan	D.C.	L.L.B. 1953, The George Washington University	
A.B. 1953, Monmouth College		Conroy, James Joseph	Maine
Christensen, Earl	Okl.	A.B. 1952, The George Washington University	
A.B. 1943, Montana State University		Cont, John William	La.
Christian, Leonard Darold	Mich.	A.B. 1951, Bowdoin College	
B.M.E. 1950, The George Washington University	Ill.	Conway, Bryant Waylant	W.Va.
Christiansen, James Richard		A.B. 1952, Louisiana State University	
B.S.E. 1950, University of Michigan	Ind.	Coon, Elvin Ralph, Jr.	N.Y.
Christiansen, Robert		B.S. 1946, University of Michigan	
B.S. 1950, University of Illinois	N.Y.	Cooper, George Honess	
Christy, Lowell Francis	D.C.	B.M.E. 1951, The George Washington University	
B.S. in F.S. 1950, Georgetown University		Copley, Douglas Martin	N.Y.
Chu, Euclid		A.B. 1950, Syracuse University	
Cica, Stephen	D.C.	Coppel, Arthur	N.Y.
M.L. 1948, University of Belgrade		A.B. 1949, University of Virginia	
L.L.D. 1941, University of Rome	Va.	Corbin, Douglas Tenny	Calif.
Claffy, Kathleen Helen		B.S. 1950, St. Lawrence University	
B.E.E. 1948, University of Minnesota	Del.	Cordell, John Wilbur	
Clark, Raymond Dykes		A.B. 1945, University of California	Va.
B.S. 1948, University of California at Los Angeles	D.C.	Corey, Alexander	
Clark, Robert Elliott	Conn.	A.B. 1948, Harvard University	
A.B. 1950, Dickinson College		Castello, John Henry, Jr.	Va.
Clarke, James Brent		A.B. 1950, University of Cincinnati	
Clarke, Thacher	Md.	Couble, Alexander John	Mont.
A.B. 1949, Swarthmore College		B.S. 1949, United States Naval Academy	
L.L.B. 1952, Yale University	Tex.	Coyle, James Joseph	Iowa
Clarkson, Douglas Marvin	W.Va.	L.L.B. 1948, The George Washington University	
B.E.E. 1950, Cornell		Coy, Malcolm Lee	Md.
Clay, Matthew Adam, Jr.		A.B. 1948, A.M. 1949, State University of Iowa	
B.S. 1951, University of Maryland	Pa.	Coyne, Joseph Patrick	
Cline, Toney E.		A.B. 1950, St. Ambrose College	
A.B. 1937, Concord College		Cradock, William Wood	
Cochran, Fred Edward			
B.S. in B.A. 1931, Ohio State University			
L.L.B. 1936, St. John's University			
Cohen, Daniel Clifford			
A.B., L.L.B., 1951, Harvard University			

Craft, Robert Wayne A.B. 1952, The George Washington University	D.C.	Cutler, Charles Russell B.S. 1945, California Institute of Technology	Va.
Crafton, Paul Arthur B.M.E. 1944, College of the City of New York	D.C.	J.D. 1949, The George Washington University	
M.S. 1950, University of Maryland		Czaykowski, Stanley Thomas B.S. 1951, University of Delaware	Del.
Craige, John Henry A.B. 1950, The George Washington University	D.C.	D	
Craig, Albert Gallatin, Jr. B.S. in M.F. 1947, University of Kentucky	Va.	Dahl, Lawrence Joseph B.M.E. 1943, B.B.A. 1950, University of Minnesota	Minn.
Craig, Louis G. A.B. 1941, West Virginia University	W.Va.	Daly, John Joseph A.B. 1940, The George Washington University	Va.
Craig, J. Wendall B.S. in Com. 1941, Northwestern University	D.C.	Dameyer, Richard W. A.B. 1947, University of Washington	Wash.
M.B.A. 1947, Harvard University		A.M. 1948, Fletcher School of Law and Diplomacy	
Grandell, Ralph Frederick B.Ch.E. 1951, M.Ch.E. 1952, Rensselaer Polytechnic Institute	Colo.	M.B.A. 1950, Harvard University	
Grandell, William Palmer B.S. 1952, University of Rhode Island	Md.	Daniel, Sidney Thorslare A.B. 1942, New York University	Va.
Gravens, James Carpenter B.S. 1952, University of Rhode Island	R.I.	Darden, Edwin James A.B. 1948, LL.B. 1950, University of Mississippi	Va.
Graven, John Pinna B.S. in C.E. 1946, Cornell University	Va.	Darling, Joseph Warren B.S. 1937, Harvard University	Pa.
M.S. in C.E. 1947, California Institute of Technology		M.B.A. 1934, University of Pennsylvania	
Pl.D. 1951, State University of Iowa		Davenport, Thomas Ira B.S. 1944, 1947, M.S. 1951, Pennsylvania State College	D.C.
Crawford, Armon Davis Acheson B.S. 1949, United States Naval Academy	Md.	Davis, Carl Clall B.S. 1942, Oklahoma Agricultural and Mechanical College	Va.
LL.B. 1951, The George Washington University		LL.B. 1948, University of Oklahoma	
Crickensberger, Ira Jethro B.F.E. 1952, The George Washington University	Va.	Davis, Lorimer Nathaniel A.B. 1942, Marietta College	Va.
Crocan, John Charles B.B.A. 1952, University of Miami	Va.	Davis, Olga B.S. 1949, Columbia University	N.Y.
Crooks, Robert Gladston B.S. M.S. 1949, Massachusetts Institute of Technology	D.C.	Davis, Ozzio Luke, Jr. A.B. 1949, Ed.M. 1950, North Texas State Teachers College	Tex.
Crotch, Robert B. B.S. in C.E. 1949, University of Idaho	Idaho	Davis, Paul Sprague A.B. 1940, Harvard University	Ill.
Cronley, Francis Joseph B.S. 1948, Norwich University	Va.	J.D. 1942, University of Chicago	
Cronley, James Worthington A.B. 1950, The George Washington University	Tenn.	LL.M. 1952, Catholic University of America	
Crowther, J. Wealey B.S. 1952, Utah State College	Idaho	Davis, Wilbur Chamberlin A.B. 1950, University of Maryland	Md.
Crumpler, Roland A.B. 1952, The George Washington University	N.C.	Dean, Benjamin Franklin A.B. 1950, The George Washington University	D.C.
Callen, Garrett Joseph, Jr. B.S. 1949, Boston College	Va.	Dean, Hazen Stewart B.S. 1947, University of Illinois	Va.
Cunningham, Hughes Westcott A.B. 1943, The College of William and Mary	Va.	DeCaro, Francis M. A.B. 1951, Syracuse University	N.Y.
Curran, Mark Cooney J.D. 1950, Northwestern University	Ill.	DeGrandi, Joseph Anthony B.S. 1940, Trinity College	Conn.
Curry, Bryce Quinton A.B. 1951, The George Washington University	Ala.	M.S. 1950, The George Washington University	
Curry, Allen Benjamin B.Ch.E. 1943, Penn College	Ohio	DeGuzie, Everett T. B.S. 1949, Massachusetts Institute of Technology	N.Y.
Conard, Robert Franklin B.S. in Eng. 1950, LL.B. 1951, The George Washington University	Va.	Delahanty, Robert Edward B.C.E. 1948, University of Louisville	Ky.
Custer, Frank Hickman B.S. 1950, Pennsylvania State Teachers College, West Chester	Pa.	DeLaune, Georges Rend LL.D. 1946, University of Paris	France
		Dewey, John Dickson B.S. 1950, Michigan State College	Va.
		Dickerson, Charles Daniel A.B. 1946, LL.B. 1950, University of Virginia	Va.

DiLorenzo, Anthony John A.B. 1951, Catholic University of America	Conn.	Dupree, William Morton LL.B. 1948, University of Miami	Md.
DiLorenzo, Theodore John A.B. 1950, Trinity College	Conn.	Duvall, Donald Knox A.B. 1949, Yale University	D.C.
Dixon, Robert G., Jr. A.B. 1943, Ph.D. 1947, Syracuse University	N.Y.	Dwyer, John B. A.B. 1950, Miami University J.D. 1952, Ohio State University	Ohio
Denekas, Marvin Edward A.B. 1952, Central College	D.C.	Dysland, Robert Carroll	Md.
Dickson, William Francis Dierker, James George B.S. in C.E. 1949, Kansas State College of Agriculture and Applied Science	Va. Kans.	E	Ky.
Dillard, George P. Dillehay, Thomas Jefferson, Jr. B.B.A. 1957, A.M. 1929, Baylor University	D.C. Tex.	Eastin, Roy B., Jr. A.B. 1942, A.M. 1945, The George Washington University	Calif.
J.D. 1952, The George Washington University		Eastman, Robert Emerson B.S. 1945, United States Naval Academy	Mass.
DiMartino, Horace Robert Dix, Leslie Vernon A.B. 1950, Iowa State Teachers College	Mass. Wis.	Eaton, John David B.S. 1944, United States Naval Academy	D.C.
Dixon, Benjamin Franklin A.B. 1939, University of North Carolina	N.C.	Ebert, Eugene A.B. 1952, The George Washington University	D.C.
Dodge, John Parker A.B. 1940, Johns Hopkins University	Md.	Echegaray, Miguel de A.B. 1952, The George Washington University	Pa.
Dolan, Charles Heave III A.B. 1950, Kenyon College	Conn.	Eckensberger, William Henry, Jr. A.B. 1951, Muhlenberg College	D.C.
Donaldson, John Eldridge, Jr. A.B. 1949, The George Washington University	Va.	Edelschein, Theodore Edward A.B. 1952, The George Washington University	D.C.
Donahue, Edward Brennan B.S. in M.E. 1940, South Dakota State College of Agriculture and Mechanic Arts	Nebr.	Efron, Reuben J.D. 1952, University of Vytautas	N.C.
Donnelly, Richard Charles Donoghue, John Francis A.B. 1951, Catholic University of America	D.C. D.C.	The Great Egerton, Robert Bradley B.S. 1950, University of North Carolina	W.Va.
Donohue, John Andrew A.B. 1952, The George Washington University	Va.	Elias, George, Jr. B.B.A. 1950, Western Reserve University	D.C.
Dougherty, Thomas James A.B. 1951, The George Washington University	Va.	Ellis, John Cole A.B. 1949, Yale University	Md.
Dougherty, Wayne J. A.B. 1941, State University of Iowa	Iowa	Elward, Elizabeth Anne A.B. 1949, Trinity College	Va.
Douvas, Augustus George B.S. 1947, University of Nebraska LL.B. 1949, Harvard University	Mass.	Ely, Adair Anderson A.B. 1951, University of Virginia	Va.
Doyle, Edward Joseph B.S. 1950, Syracuse University	N.Y.	Engleby, Joseph Thomas A.B. 1951, Washington and Lee University	Va.
Doyle, James Henry, Jr. B.S. 1946, United States Naval Academy	Calif.	Englert, Roy Theodore A.B. 1943, Vanderbilt University	Ill.
Drake, John G. B.S. 1951, American University	Va.	LL.B. 1951, Columbia University	Ohio
Drayer, John Roger B.S. 1948, Ohio State University	Ohio	Erdley, Randall George B.S. in M.E. 1950, Purdue University	Va.
Drescher, John M., Jr. A.B. 1949, Princeton University	Mo.	Ericson, John Williamson B.S. in Ch.E. 1949, University of Illinois	
Dunn, Alanson Burton A.B. 1938, B.B.A. 1947, University of Texas	Tex.	Erwin, Clyde Vernon, Jr. A.B. 1950, North Central College	Va.
Dunn, Elwood McDonald, Jr. B.S. 1941, University of North Carolina	N.C.	Ethington, Paul James B.S. 1949, Iowa State College of Agriculture and Mechanic Arts	Md.
Dunn, George Martin A.B. 1949, The George Washington University	N.Y.	Euzent, Sylman Isaac B.S. 1950, University of Missouri	Va.
		Evans, Barbara Rugen A.B. 1942, College of Wooster	Va.
		Evans, James Gilbert, Jr. A.B. 1947, University of North Carolina	
		LL.B. 1950, University of Virginia LL.M. 1952, The George Washington University	

Everett, Franklin Milton B.S. 1950, The George Washington University	D.C.	Flint, George Marsh, Jr. A.B. 1940, Harvard University LL.B. 1945, The George Washington University	Mass.
Evers, Herbert Joseph B.M.E. 1947, Cooper Union	D.C.	Flockey, Paul Jay A.B. 1951, Lebanon Valley College	Pa.
Evell, John Francis B.S. 1946, Virginia Military Institute	Va.	Folbin, John Walker A.B. 1947, Yale University	Va.
F			
Fallon, Eugene Brady B.S. 1944, United States Naval Academy	N.Y.	Ford, Eugene Francis A.B. 1951, The George Washington University	D.C.
Farnes, Wallace Darwin A.B. 1951, Idaho State College	D.C.	Forry, John Emerson B.S. in M.E. 1949, Oklahoma Agricultural and Mechanical College	Va.
Farguhar, Gordon Nesbitt A.B. 1948, Yale University	D.C.	Foster, Thomas Russell B.M.E. 1947, Georgia Institute of Technology	S.C.
Farrington, Charles Jerome, Jr. A.B. 1951, University of Arizona	Ariz.	Foutz, Hal Bert B.S. 1952, Brigham Young University	Nev.
Farris, Frederick Arthur B.S. 1946, University of Minnesota	Calif.	Frankel, Abraham B.S. 1951, Brooklyn College	N.Y.
Fawkes, Bernard Thomas A.B. 1950, Colgate University	Va.	Franklin, Alfred Carl A.B. 1949, University of Virginia	Ohio
Fay, Richard Joseph A.B. 1951, College of the Holy Cross	N.J.	Franklin, Jordan B.S. in M.E. 1946, Worcester Polytechnic Institute	Mass.
Fedele, Frank B.B.A. 1949, College of the City of New York	N.Y.	Franklin, Rufus Matteson B.S. 1947, Massachusetts Institute of Technology	R.I.
Fezzell, Sam George A.B. 1951, New York University	Mont.	Franks, George William A.B. 1950, University of Nevada	D.C.
Fenick, Donald J. B.S. 1952, University of Pennsylvania	Pa.	Frantz, John Henry B.S. 1948, University of Notre Dame	Ill.
Fenichell, Melvin Medford A.B. 1943, Dartmouth College	N.Y.	LL.B. 1951, Georgetown University	Ohio
Fenwick, Edward Gultmyer, Jr. A.B. 1950, University of Virginia	Va.	Fraser, Donald Ross B.S. 1952, University of Toledo	R.I.
Ficker, Charles Joseph A.B. 1951, West Virginia University	W.Va.	Freeman, Jack Miller B.S. 1949, Florida Southern College	Ill.
Finch, Walter Gilcrest B.E. 1940, M.E. 1950, Johns Hopkins University	Md.	Freeman, Richard Alan A.B. 1949, University of Chicago A.B. 1952, The George Washington University	Va.
Finch, Walter Gilcrest LL.B. 1948, M.B.A. 1949, Temple University	Pa.	Freret, Elizabeth Strachlan B.B.A. 1942, Tulane University LL.B. 1950, The George Washington University	Md.
Finch, Walter Gilcrest LL.M. 1949, The George Washington University	D.C.	Freudenberg, Maxwell Charles B.S. in E.E. 1948, University of Illinois	D.C.
Fine, Martin Meyer B.S. 1940, Bucknell University	Pa.	Friedman, Reuben B.Ch.E. 1949, College of the City of New York	D.C.
Fink, Jules Verne A.B. 1949, LL.B. 1952, The George Washington University	Pa.	A.M. 1950, Columbia University	D.C.
Finn, Anne Mary A.B. 1943, B.S. 1944, Marywood College	D.C.	Frohmman, Alice Patricia A.B. 1952, Wellesley College	N.Y.
Finn, Stanley Alfred B.B.A. 1949, University of Miami	Tex.	Fry, Roy Alexander A.B. 1950, Iona College	Va.
Fischer, Jerry Edward A.B. 1951, University of Texas	Ky.	Fugate, Wilbur Lindsay A.B. 1934, Davidson College	Md.
Fish, Jerome Sullivan A.B. 1951, Berea College	Md.	LL.B. 1937, University of Virginia LL.M. 1950, The George Washington University	N.J.
Fisher, Frank Marshall B.S. 1943, United States Coast Guard Academy	D.C.	Fuller, William Elliott B.S. in M.E. 1944, United States Coast Guard Academy	D.C.
Flanagan, Daniel J., Jr. A.B. 1949, Gannon College	D.C.	Funger, Morton Irwin A.B. 1953, The George Washington University	Md.
LL.B. 1951, Catholic University of America	N.C.	Funkhouser, Claude B.S. in M.E. 1943, University of Maryland	
Flather, Alfred Chester B.S. 1952, Wilson Teachers College			
Fleming, James Carlton A.B. 1949, LL.B. 1951, Duke University			

G			
Gapeynski, William George	N.Y.	Goodman, Harold Jacob	Va
B.S. 1917, Union College		A.B. 1952, University of Richmond	D.C.
Garbutt, Eugene James	D.C.	Goodman, Thomas A.	
B.S. 1950, University of Wisconsin		B.S. 1917, New York State Teachers	
Gardner, Harold Wayne	D.C.	College, Buffalo	
A.B. 1951, West Virginia University		A.M. 1949, Columbia University	Ohio
Gardner, Richard Delroy	Utah	Goodson, Luke Barrett	
B.S. 1949, Utah State Agricultural		A.B., B.S. 1917, University of	Ohio
College		Oklahoma	
Garlock, Robert Austin	N.Y.	Goodwin, George Edward	
A.B. 1949, Union College		B.S. 1948, United States Naval	N.D.
A.M. in P.A. 1951, The George		Academy	
Washington University		Gorder, Charles Franklin	
Garner, Charles Louis	Nev.	B.S. 1947, United States Naval	Va
B.S. in E.E. 1947, University of New		Academy	
Hampshire		Gordon, Albert	
Gander, Richard Austin	D.C.	B.M.E. 1944, College of the City of	Ma.
B.S. in M.E. 1947, University of		New York	
Rochester		Gordon, Forest	
Gaudio, Anthony Carl	N.Y.	A.B. 1952, The George Washington	W.Va
B.S. 1952, University of Wisconsin		University	
Gautier, Eduardo Emilio	Va.	Gore, John William	
A.B. 1950, Marshall College		A.B. 1947, Shepherd College	
Gaynor, James Kenneth	Ind.	A.M. 1950, The George Washington	D.C.
B.S. 1946, J.D. 1950, Indiana		University	
University		Gori-Montanelli, Riccardo	
Gaynor, Rudolph Joseph	N.Y.	L.L.D. 1946, University of Florence	
B.S. 1952, University of Maryland		S.I.D. 1950, University of Virginia	Neb.
Gemeny, William Gordon	Md.	Gotthard, Kenneth Samuel	
A.B. 1951, University of Maryland		A.B. 1951, The George Washington	N.Y.
Gendron, Norman Hubert	Va.	University	
B.S. 1950, College of the Holy Cross		Gralnick, Paul Philip	N.M.
Generally, Richard Henry	D.C.	A.B. 1939, Brooklyn College	
Gerry, Martin E.	D.C.	Grannett, David Allen, Jr.	Ala.
B.E.E. 1948, M.E.E. 1951, Poly-		B.E.A. 1947, University of Texas	
technic Institute of Brooklyn		Griffith, William Alvin	Min.
Gewirtz, Edwin Norman	Md.	B.L.E. 1942, Georgia Institute of	
A.B. 1952, University of Maryland		Technology	
Gilbert, Stanley Donald	D.C.	Grant, David Franklin	P.C.
Gillette, William Miller	Fla.	B.S. 1948, University of Vermont	
B.S. 1952, Florida State University		Gras, John Alexander	Va
Gilmore, Francis John	D.C.	A.B. 1941, Dartmouth College	
A.B. 1951, Georgetown University		Gray, Robert Freeman	Va
Ginsburg, Ronald Armand	D.C.	B.B.A. 1947, M.B.A. 1948, University	
Giordano, Anthony Sam	D.C.	of Maryland	
A.B. 1952, University of Maryland		Graves, Arthur Leslie, Jr.	Va
Gjuphovich, Nicholas Francis	D.C.	A.B. 1948, Norwich University	
L.L.B. 1932, University of Zagreb		Greaver, Vernon Elmer	
Glaser-Skalny Juan Paul	Va.	A.B. 1951, The George Washington	Va
L.L.D. 1933, Comenius University		University	
Glasgow, Lawrence Gray	D.C.	Green, John Taylor	
B.S. 1948, University of Missouri		A.B. 1948, Louisiana State University	P.C.
Godiksen, Marian Agnes	Iowa	L.L.B. 1949, University of Richmond	
A.B. 1952, State University of Iowa		Greenberg, Jean Goldman	Md.
Gogarty, John Edward	Md.	A.B. 1947, L.L.B. 1949, Cornell	Del.
B.S. 1952, University of Maryland		University	
Goldberg, Alvin Irvin	D.C.	Greene, Harold Herman	
B.S. 1941, Boston University		Greener, Richard L.	D.C.
Goldenberg, Melvin Myron	D.C.	A.B. 1950, University of Tennessee	
B.M.E. 1949, Catholic University of		Greer, Thomas J., Jr.	
America		B.S. in Eng. 1950, The George	Va
Golding, Harold Frederick	Va.	Washington University	
B.S. 1951, University of Richmond		Greig, John G.	N.Y.
Goldman, Sherman H.	Mass.	B.S. 1949, J.D. 1956, New York	
B.S. in M.E. 1948, Northeastern		University	
University		Grossman, Philip	Ind.
Golen, Gerald	Va.	B.S. 1953, New York University	
A.B. 1952, The George Washington		Grua, Edward George	
University		B.S. 1949, M.S. 1951, Purdue	
	D.C.	University	
		Dr. en Droit 1950, University of Lyon	

Gulick, Richard Iran		59	
B.S. 1945, United States Naval Academy	Md.	Hay, James Everette	Tenn.
Guntler, John Joseph	D.C.	Haynes, Alton Myles	N.C.
Guthrie, William Joseph, Jr.	Mass.	A.B. 1949, University of North Carolina	
A.B. 1952, The George Washington University	Philippines	Hayes, William Quay	Fla.
Guyano, Diosdado de la Fuente		B.S. in Eng. 1950, University of Miami	D.C.
L.B. 1949, University of Santo Tomas		Heath, James Clark	
		A.B. 1950, University of Tennessee	
		Hecht, Irving Mark	Md.
		B.B.A. 1947, College of the City of New York	
		Heck, John Henry	Pa.
		A.B. 1941, Pennsylvania State College	
		A.M. 1951, The George Washington University	
		Heckert, Jackson Shaffer	Md.
		B.S. 1942, Pennsylvania State College	
		Hedger, William Edmund	Mass.
		B.S. 1951, Lake College	
		Hege, John Henry, M.D.	Pa.
		A.B. 1948, Gettysburg College	
		M.D. 1943, Hahnemann Medical College	
		Heider, George Charles, Jr.	Md.
		B.S. 1941, University of Maryland	
		Heller, Milton	Md.
		B.S. 1950, The George Washington University	
		Heller, Norman Harold	Md.
		A.B. 1950, L.L.B. 1952, The George Washington University	
		Hellmuth, James Grant	Va.
		B.S. 1947, Yale University	
		Henderson, Ralph Edison	Ill.
		A.B. 1945, Augustana College	
		Henderson, Francis A.	Md.
		A.B. 1957, Bernard College	
		Hendrix, Paul Max	Ill.
		A.B. 1950, The George Washington University	
		Henry, Thomas Joseph	D.C.
		A.B. 1957, The George Washington University	
		Herscov, David Allen	Mich.
		B.S. in E.E. 1950, University of Michigan	
		Henry, Thomas Goodell	Maine
		A.B. 1950, Bowdoin College	
		Henson, Louis Nantz, Jr.	D.C.
		A.B. 1948, The George Washington University	
		Herman, Luciana Theresa	D.C.
		B.S. 1955, Wilson Teachers College	
		Herr, Richard Aaron	Mo.
		B.S. 1951, University of Washington	
		Heisch, Harold Hiles	Va.
		A.B. 1951, Bowdoin College	
		Hess, Lawrence Eugene, Jr.	Pa.
		B.S. 1947, United States Naval Academy	
		Heywood, Francis Dewey	N.C.
		A.B. 1948, University of North Carolina	
		L.B. 1951, The George Washington University	
		Hicks, Guy Thomas	Va.
		A.B. 1941, Indiana College	
		Hick, Carl Arthur	Pa.
		A.B. 1951, Dickinson College	
		Hill, Sarah Claude, Jr.	W.Va.
		B.S. in A.E. 1952, West Virginia University	

Hiller, William Eugene	D.C.	Hutton, Wallace Eugene	
B.S. 1949, Tulane University		A.B. 1950, Indiana University	
Hinter, William	Md	Hyde, George Richard	
B.S. 1942, The George Washington University		A.B. 1952, Brigham Young University	
Hipps, George Orville	W Va.	I	
A.B. 1942, Grove City College			
Hise, William Curtis	Ill	Irwin, Walter Curtis	
A.B. 1948, A.M. 1949, University of Illinois		B.S. 1946, University of Rhode Island	
Hix, Ernest Theodore	Va.	A.M. 1949, American University	
B.M.E. 1949, LL.B. 1952, The George Washington University		Imbry, Daniel Ken	
Hock, Marvin Michael	Wyo.	A.B. 1948, University of Hawaii	
A.B. 1947, University of Wyoming		Iovino, Charles Anthony	
Hogg, Benjamin Whiting	Va.	A.B. 1942, The George Washington University	
A.B. 1947, University of Virginia		Irwin, Emma Joseph	
Holmes, Donald Eugene	Wyo.	A.B. 1951, Boston College	
B.S. 1948, United States Naval Academy		Irwin, Elcano Hood	
Holmes, Charles Gould	Ariz.	A.B. 1947, Cornell University	
A.B. 1947, Stanford University		Israel, Thomas Samuel	
Holmes, William Curtis	Va.	A.B. 1952, The George Washington University	
A.B. 1948, The George Washington University		J	
Holmes, Daniel Lloyd	Va.		
A.B. 1947, University of Virginia		Jackson, Arville Jr.	
Holmes, Norman Philip	N.Y.	B.S. in Eng. 1950, Virginia Polytechnic Institute	
B.S. 1947, College of the City of New York		Jackson, Frank Herbert	
Holmesworth, John Allen	Va.	B.S. 1948, University of Maryland	
A.B. 1947, University of Virginia		Jackson, Gerald Thomas	
Holmes, Paul Bruce	N.Y.	B.S. 1947, University of Scranton	
B.M.E. 1949, Rensselaer Polytechnic Institute		Jackson, Harold Leon	
Holmes, Ralph Nelson, Jr.	Va.	B.S. 1947, California Institute of Technology	
B.S. 1947, University of Maryland		Jacobs, Fred	
LL.B. 1948, University of Virginia		B.L.E. 1948, College of the City of New York	
Holmes, Arnold	Va.	Jacob, John Brevard	
A.B. 1947, University of Virginia		Lawrence, Harold	
Holmes, James Edward Jr.	Pa.	B.S. in Ed. 1949, Pennsylvania State University	
B.S. 1949, Pennsylvania State College		Lawrence, Robert	
Holmes, James Wilson	Va.	Lawrence, Joseph Roder	
Hopp, John Joseph	R.I.	A.B. 1947, Tufts College	
B.S. 1942, University of Rhode Island		Latex, Paul Rene Jr.	
Horan, James Michael	N.Y.	B.S. 1947, University of Maryland	
B.S. 1947, Fordham University		Jampolsky, Harry Hersh	
Horsky, Eugene Germany	N.Y.	A.B. 1947, Clark University	
B.S. 1948, B.C.E. 1949, Rensselaer Polytechnic Institute		Jara, Fred Carl Jr.	
Hosford, John Edward	Mich	B.S. 1947, University of Maryland	
B.S. in Eng. 1949, LL.B. 1952, University of Michigan		Jarvis, Harold George	
Hoskins, William David	Md	B.S. in E.E. 1949, Rhode Island State College	
A.B. 1942, Western Maryland College		Jasnowski, Edmund Michael	
Hoskins, Fabian Sebastian	D.C.	B.L.E. 1947, University of Connecticut	
A.B. 1942, St. Mary's University		Jasnowski, Leonard Albert	
Hoskins, Robert Bruce	Va.	A.B. 1947, University of Connecticut	
A.B. 1947, University of Cincinnati		Jean, John Joseph	
Hoskins, Stephen Dwight	Maine	LL.B. 1947, The George Washington University	
B.B.A. 1948, Southern Methodist University		Jacobsen, Rolf	
Hoskins, Allan Stanton	Wash.	LL.B. 1947, University of Rutgers	
LL.B. 1947, The George Washington University		Jefferson, James Monroe Jr.	
Hoskins, George Edward	D.C.	A.B. 1947, Princeton University	
A.B. 1947, The George Washington University		Jennings, James Charles	
Hutton, Harrison Darden	La.	LL.B. 1947, University of Kansas City	
A.B. 1947, Southeastern Louisiana College		Jennings, Vincent James	
J.D. 1947, The George Washington University		A.B. 1947, Yale University	
		Jensen, Homer Mark	
		A.B. 1947, Brigham Young University	
		Jensen, Robert Lane	
		Jen, Jenday	
		LL.U. 1943, University of Prague	

Johnson, Wilford W. A.B. 1951, Idaho State College	Idaho	Kearns, Joseph Patrick, Jr. B.F. 1941, Johns Hopkins University	Md.
Johnson, Earl Winton B.S. 1942, Pennsylvania State College	N.Y.	LL.B. 1942, University of Maryland	
Johnson, Lee Parsons, Jr. A.B. 1947, University of Colorado	Va.	Keenes, John Christopher B.S. 1947, Seton Hall University	Pa.
Johnson, Marshall Treston B.S. 1947, University of Maryland	Md.	LL.B. 1949, Dickinson College	
Johnson, William Fawcett LL.B. 1949, Washington College	Va.	Keene, Ray Edward A.B. 1949, Miami University	Md.
Johnson, Louis Clark A.B. 1951, Pace University	Va.	Kellegren, Gordon Thomas A.B. 1952, The George Washington University	Va.
Johnson, Norman William B.S. 1947, University of Scranton	N.C.	Keller, William Leonard LL.B. 1950, Southern Methodist University	Tex.
Johnson, Earl Winton B.S. 1947, West Virginia University	Pa.	Kelly, David Philip B.S. 1941, Lehigh University	D.C.
Johnson, Carl Allen B.S. 1945, University of Washington	W.Va.	Kelly, Daniel Martin B.C.E. 1947, Cornell University	Va.
Johnson, M. D. D. 1942, University of State House	Oreg.	LL.B. 1942, Georgetown University	
Johnson, M. D. 1942, The George Washington University		Kelly, Dee I. A.B. 1942, Texas Christian University	Tex.
Johnson, Robert Miller B.S. 1941, M.I. 1940, University of New Hampshire	N.H.	Kelly, Joseph John B.S. 1940, Ohio State University	Pa.
Johnson, Paul Dexter B.M. 1941, Ohio State University	Ohio	Kelly, Arthur David, Jr. A.B. 1942, The George Washington University	Md.
Johnson, Neil Bernard B.S. 1941, University of Scranton	Pa.	Kerr, Ralph St. Clair B.S. 1941, Pennsylvania State College	Pa.
Johnson, University of Pennsylvania	Pa.	Kendall, John Roughton A.B. 1941, Carnegie University	Md.
Johnson, LL.B. 1948, The George Washington University	Va.	LL.B. 1941, The George Washington University	
Johnson, University of Florida	Fla.	Kennedy, Richard Dean B.S. 1941, Carnegie Institute of Technology	Conn.
Johnson, University of Rhode Island	R.I.	Kenny, Raymond Joseph B.S. 1941, University of Oklahoma	N.Y.
Johnson, Temple University	Va.	Kerr, Edward James A.B. 1944, University of Hawaii	Va.
Johnson, Catholic University of America	Md.	LL.B. 1941, Columbia University	
Johnson, LL.B. 1948, New York	Md.	Kerr, William Thomas B.S. 1941, C.E. 1942, Kansas State College of Agriculture and Applied Science	Va.
Johnson, LL.B. 1949, University of Pennsylvania	D.C.	LL.B. 1942, Stanford University	
Johnson, LL.B. 1949, University of Pennsylvania	N.Y.	Kerr, John Zelman B.S. 1940, Northwestern University	Va.
Johnson, Pennsylvania Military College of the City of	Mass.	Kerr, Alex Arthur B.S. 1941, United States Naval Academy	Va.
Johnson, United States Naval	N.Y.	Kerr, Marvin Herbert B.S. 1941, Indiana University	Ind.
Johnson, University of Pittsburgh	D.C.	Kerr, Robert Joseph B.S. 1941, Pennsylvania State Teachers College, Muncie	Va.
Johnson, Washington Municipal College of the City of	D.C.	Kerr, Arthur Seymour B.S. 1941, University of Pennsylvania	D.C.
Johnson, The George Washington	N.I.	Kerr, Robert Martin B.S. 1941, Georgetown University	W.Va.
Johnson, AM 1941, University of	Ind.	LL.B. 1941, The George Washington University	
		Kilpatrick, Edward Ford A.B. 1941, University of Missouri	D.C.
		Kim, Alexander Young Ha A.B. 1941, University of Hawaii	Hawaii
		Kim, Albert Joseph M.E. 1941, University of Wisconsin	D.C.
		Kinderman, Eugene Paul B.S. 1941, University of Illinois	Ill.
		Kirchman, Gordon Edmund A.B. 1941, University of Maryland	Md.
		Kirchman, Thomas S. A.B. 1941, University of Maryland	Md.

Kins, Ruth Evelyn B.S. in B.A. 1933, University of South Dakota	D.C.	Kuhl, Arthur Mathias A.B. 1930, The George Washington University	Mont.
Kins, Walter Mason, Jr. LL.B. 1951, University of Virginia	D.C.	Kurtz, Philip Ellledge B.S. 1912, University of Maryland	Md.
Kipps, Clarence Turner, Jr. B.S. 1951, American University	Va.	Kushner, Alvin Julian A.B. 1951, University of Maryland	Md.
Kirkley, William Joseph B.S. 1946, United States Coast Guard Academy	Va.	L	Va.
Kistner, Rudolph H. A.B. 1950, A.M. 1951, Syracuse University	N.Y.	Labowitz, Allan Marvin B.S., Ch.E. 1948, West Virginia University	Tenn.
Kitsoulis, Michael Thomas A.B. 1953, The George Washington University	D.C.	Lackey, Harrington Ashton B.S.E. 1949, Princeton University LL.B. 1951, Vanderbilt University	Calif.
Klennan, Ansel B.S. 1950, Ohio State University	D.C.	Laffin, Edward John LaGambay, Weisenap Rancap B.S.C. 1949, Far Eastern University LL.B. 1951, Manuel Lins Quezon College	Philippines N.Y.
Kline, David Joel B.S. 1947, Cooper Union	D.C.	Lajosa, Charles Peter B.S.S. 1949, Georgetown University	Okla.
Kline, Ralph Henry A.B. 1951, The George Washington University	Pa.	Laman, Wanda Jean B.S. in Ed. 1951, Central State College	Ind.
Kline, Robert Charles B.S. 1951, Pennsylvania State College	Va.	Lambert, Vasilios Simos Land, Ernest Henry A.B. 1950, Illinois College	Va.
Kline, Robert Clinton B.S. 1943, United States Naval Academy	N.D.	Landman, Robert Samuel A.B. 1951, The George Washington University	Ind.
Knight, Garry Lloyd, Jr. B.S. 1947, Purdue University	Ind.	Lane, Earl Frederick A.B. 1952, Carleton College	Ill.
Knopp, Edna A.B. 1943, Brooklyn College	N.Y.	Langham, Dwight William B.S. in Ed. 1948, University of Illinois	Ill.
Knotts, James Owen A.B. 1950, University of Maryland	Md.	LL.B. 1951, Georgetown University	P.C.
Koenig, James Frederick A.B. 1949, University of California at Los Angeles	Calif.	Lanning, Geoffrey J. A.B. 1949, LL.B. 1952, Harvard University	Mich.
Kominaki, John B.S. 1950, Pennsylvania State College	Pa.	Larsen, Jack A.B. 1942, Princeton University A.M. 1947, University of Michigan	Ohio
Konold, William George B.E.E. 1949, Cornell University	Ohio	Laub, William John, Jr. A.B. 1950, Yale University	Md.
Kornhauser, Alvin A.B. 1952, The George Washington University	D.C.	Laubecker, Lawrence Edwin B.E.E. 1952, The George Washington University	Pa.
Korpeck, Jerome Eli A.B. 1947, University of Rochester LL.B. 1953, The George Washington University	N.Y.	Laux, James Joseph B.S. 1946, Syracuse University	Va.
Kostic, Steven A.B. 1952, University of Pittsburgh	Pa.	Lawrence, Derek Peter B.M.E. 1948, Clarkson College of Technology	N.C.
Kostka, Fred Paul B.S. in M.E. 1942, University of Rhode Island	K.I.	Lawrence, James Fugate B.S. in Comm. 1941, University of North Carolina	Md.
Koushion, Harry George B.S. 1950, Albright College	Pa.	Lawrence, John Craig B.S. 1950, United States Naval Academy	N.C.
Kramer, Gerson Baltimore A.B. 1951, Rutgers University	D.C.	Lawrence, Simon S., Jr. B.S. 1949, University of North Carolina	D.C.
Kramish, Arvin Morris A.B. 1947, A.M. 1949, University of Denver	Colo.	Laws, Bolitha James A.B. 1951, Dartmouth College	Md.
Kraus, Jerome A.B. 1943, University of Chicago B.S. in E.E. 1947, University of Illinois	Md.	Law, Russell Lewis B.S. 1950, Seton Hall College	D.C.
Krein, Arthur Nicholas B.S. 1949, Case Institute of Technology	D.C.	Layne, Edward Booker, Jr. A.B. 1951, University of Maryland	Mont.
Krol, Casimir Thaddeus A.B. 1947, St. John's College	Ill.	Leach, Charles A. B.S. 1950, Springfield College	Md.
Kuemmerling, Ted Denise A.B. 1950, Principia College	Ohio	LeClair, Joseph Roland B.S. 1948, University of Maine	
Kuenstle, William T. A.B. 1951, University of Maryland	D.C.		

Mullarney, John Kenneth	Md.	Norman, Henry Robert	N.Y.
M.E. 1950, Stevens Institute of Technology		A.B. 1951, Western Maryland College	D.C.
Muresianu, Dinu Alexandrescu	D.C.	Norrington, Frances Taylor	
Faculty of Laws and Economics, 1925, University of Bucharest of Paris		A.B. 1952, The George Washington University	Md.
Murphy, John Ancona	Md.	Norris, Paul Maxfield	
B.S. 1948, Georgetown University		B.S. 1946, United States Military Academy	D.C.
Murray, John Joseph, Jr.	Mass.	Norris, Walter Franklin	
B.S. 1949, Boston College		A.B. 1951, Westminster College, Mo.	D.C.
LL.B. 1952, The George Washington University		Norton, Edward James	D.C.
Murray, Joseph	Va.	A.B. 1948, Columbia University	
B.S. 1940, University of Richmond		Norton, Overton Perry	Kent.
Murrish, Everett Clark	Ohio	A.B. 1943, University of Michigan	
A.B. 1947, Harvard University		Nuttman, Harold Franklin	
LL.B. 1950, The George Washington University		A.B. 1950, The George Washington University	Pa.
Muskett, James William	Pa.		
B.S. 1950, St. Joseph's College		Obarski, John Paul	
N		B.S. 1945, United States Coast Guard Academy	D.C.
Nachtsheim, John J.	N.J.	O'Brien, Anthony Aloysius	
B.S. in N.A. and M.E. 1947, Webb Institute of Naval Architecture		B.M.E. 1950, The George Washington University	Md. Va.
Naisako, Edward George	Pa.	O'Connell, John Joseph	
B.S. 1946, University of Pennsylvania		O'Connor, James Francis, Jr.	Wash. Man.
Nalla, John Willard	Md.	A.B. 1940, Columbia University	
Nally, Robert Vincent	Pa.	O'Donnell, Alice Louise	
A.B. 1950, St. Francis College, Loretto, Pa.		O'Donnell, Thomas Lawrence	Va.
Nanna, Emmett Hiram	Md.	A.B. 1946, LL.B. 1949, Harvard University	
A.B. 1950, University of Maryland			
Narel, Andrew John	N.Y.	Orden, David Pierce	Ta. Calif.
Neal, Betty Ann	S.D.	B.S. in E.E. 1950, Union College	
A.B. 1947, State University of Iowa		Olesby, William Edward	
Neal Robert Martin	Ga.	O'Gorman, John Michael	
A.B. 1948, A.M. 1949, Emory University		B.S. 1941, University of California	Ohio
Needham, Gerard Joseph	Pa.	M.S. 1942, Ph.D. 1946, California Institute of Technology	
B.M.E. 1950, Catholic University of America		Ohralik, Karl Anthony	D.C.
Needler, William Lowell	Ill.	B.S. 1948, Ohio State University	D.C.
B.S. 1946, United States Merchant Marine Academy		Olden, John Seematt	
B.S. 1950, University of Illinois		Oltmann, Gabriel	Pa.
Neely, Hubert Arthur	W. Va.	LL.M. 1948, University of Geneva	
B.S. 1941, Marshall College		O'Malley, Edward Patrick	
Nelson, Merle Ellsworth	D.C.	A.B. 1949, Bowdoin University	Md.
B.B.A. 1949, University of Minnesota		M.S. 1948, University of Tennessee	
Neshatt, John	Md.	Ondersink, Richardson Latrobe	Pa.
Neuman, Arthur Ewald	D.C.	A.B. 1947, Trinity College, Conn.	
B.S. 1950, Memphis State College			
Nicholls, Bartlett Campbell	D.C.	Orndorff, Frank Richard	
A.B. 1948, University of Minnesota		B.S. 1944, B.S. in C.E. 1948, Pennsylvania State College	
Nicholson, Robert Houston	Va.	LL.B. 1951, The George Washington University	D.C.
B.S. 1941, University of Maryland			
Niles, Theodore Lyman	N.Y.	Orman, Herta Vera	N.Y.
A.B. 1941, Yale University		LD. 1942, University of Vienna	
A.M. 1948, Columbia University		Out, Herbert Elliot	
Nitson, Byard Gann	Va.	B.S. 1947, College of the City of New York	
B.S. in E.E. 1950, University of Utah		LL.B. 1949, Columbia University	N.Y.
Nizanowski, Zenon	D.C.	LL.M. 1950, New York University	
LD. 1947, University of Cracow		Outowski, William John	
Nolan, Arthur Joseph	N.J.	A.B. 1949, Columbia College	Va.
A.B. 1941, A.M. 1952, Columbia University		LL.B. 1951, Georgetown University	
Norfolk, Milton C.	Va.	Ovrevik, Glenn Sylvan	
LL.B. 1941, St. John's University		B.S. 1951, University of Maryland	
Norman, Ellington Murray	Ga.		
A.B. 1944, University of Georgia		P	Md.
		Parviza, Francis Anthony, Jr.	D.C.
		B.S. 1951, Mt. St. Mary's College	
		Parter, Richard Elmer	
		B.S. 1951, University of Maryland	

Paley, David A.B. 1949, LL.B. 1951, The George Washington University	N.Y.	Phipps, John William B.S. in E.E. 1950, University of New Hampshire	Va.
Pallansch, Margaret Mary A.B. 1946, Trinity College, D.C.	Wis.	Pickett, Jack Milton A.B. 1950, The George Washington University	Va.
Palmer, William David B.S. 1941, United States Coast Guard Academy	Va.	Pillote, Robert Lawrence A.B. 1952, Gettysburg College	D.C.
Farler, Charles Hanke B.S. 1942, Worcester Polytechnic Institute	Va.	Pincus, Arthur A.B. 1948, The George Washington University	Md.
Farley, James Lloyd A.B. 1949, The George Washington University	D.C.	Pincus, William A.B. 1941, Brooklyn College A.M. 1948, American University	Md.
Pasternak, Andrew A.B. 1950, University of Pittsburgh	Pa.	Pineau, Roger A.B. 1942, University of Michigan	Md.
Patnaude, Edmond Thomas B.E.E. 1948, Rensselaer Polytechnic Institute	Va.	Pinkham, Richard Collins B.S. in C.E. 1948, Northeastern University	Md.
Patterson, Duane Lester A.B. 1950, Denison University	Ohio	Pittman, Mary Thomas A.B. 1945, Duke University	D.C.
Pattison, Hubert Allen B.S. 1950, Michigan State College	Md.	Plante, Norman Anthony A.B. 1950, University of New Hampshire	N.H.
Pattison, Arthur Gordon A.B. 1946, Yale University LL.B. 1950, The George Washington University	Va.	Pletcher, Ralph Weldon B.S. 1948, University of Maryland	Va.
Patkowski, Carl Joseph B.S. 1948, Cornell University	N.Y.	Ponge, Jack Pat B.S. 1949, West Virginia University	W. Va.
Peters, Joseph Edward B.S. in F.S. 1951, Georgetown University	Va.	Pollard, John Ray A.B. 1950, University of Connecticut	D.C. Conn.
Peter, Ida Hersey A.B. 1951, The George Washington University	D.C.	Porter, William Matthews A.B. 1942, University of Michigan	Pa.
Peterson, Joe Morgan B.S. 1941, Northeastern State College	Md.	Potts, Edward Andrew A.B. 1942, University of Michigan	Wash.
Peter, John Robert B.S. 1942, Washington University	Md.	Powell, John Theodore A.B. 1944, University of Washington	Va.
Peterson, David Joseph A.B. 1951, Wilkes College	Pa.	Price, Hoyt Glenn A.B. 1951, The George Washington University	Va.
Peterson, Vernon Arvid B.S. 1940, Belknap University	Ill.	Price, James Travis B.S. 1942, United States Naval Academy	Va. Va.
Peter, Leonard Winfield A.B. 1950, The George Washington University	Ill.	Prill, George Cunningham B. Ac. Eng. 1941, New York University	Va.
Peter, Ramlo Martin LL.B. 1951, LL.D. 1952, University of Maryland	Pa.	Proctor, Donald Garfield B.S. in B.A. 1951, University of Florida	R.I.
Peterson, Stanley Wilhelm A.B. 1942, The George Washington University	D.C.	Puett, William Nelson	N.C.
Peterson, Milton Maurice B.S. 1940, Central Michigan College	N.Y.	Pullrey, Robert Earl B.S. 1937, Jamestown College	Va.
Peterson, Nad Alma A.B. 1950, The George Washington University	Va.	Purman, Harriet Russell A.B. 1945, Smith College	Ky.
Peterson, Jamie Lucille A.B. 1947, A.M. 1951, The George Washington University	Utah	Quill, John Joseph A.B. 1950, Ohio Wesleyan University	Conn.
Peterson, Bruce Clark A.B. 1940, Pennsylvania State College	D.C.	Quisenberry, John Asa A.B. 1946, Harvard University	Ill.
Peterson, Catharine A.M. 1950, The George Washington University	Va.	Rackowski, Chester John A.B. 1948, Syracuse University	N.Y.
Peterson, Catharine A.M. 1950, The George Washington University	D.C.	Rack, Joseph A.B. 1950, Wilkes College	Pa.
Peterson, Catharine A.M. 1950, The George Washington University	D.C.	Randolph, Richard Eugene B.S. 1940, Michigan College of Mining and Technology	Mich.
Peterson, Catharine A.M. 1950, The George Washington University	D.C.	Raring, Freder A William B.S. 1940, Lehigh University	D.C.

Rash, Norman Eldridge	D.C.	Robbins, David	N.Y.
A.B. 1950, College of William and Mary		B.E.E. 1950, College of the City of New York	Ys
Rasmussen, Frank Joseph	Md.	Robbins, Frank Edward	P.C.
B.S. in M.E. 1939, University of Illinois		L.L.B. 1944, Rensselaer Polytechnic Institute	Ys
Reagan, Daniel F., Jr.	D.C.	Roberson, William Donald	N.Y.
A.B. 1951, The George Washington University		B.S. 1951, The George Washington University	Ys
Reardon, Daniel Joseph	N.Y.	Robinson, Charles Augustus, Jr.	Ys
B.S. 1947, College of the Holy Cross		B.E.E. 1950, University of Virginia	Ys
M.S. 1951, New York State College for Teachers		Robinson, Harold LeRoy	N.Y.
Reardon, James Gavin	Mass.	A.B. 1952, The George Washington University	Ys
A.B. 1950, College of the Holy Cross		Robinson, LeRoy	Ys
Reback, William	D.C.	B.S. 1950, L.L.B. 1951, Wake Forest College	Ys
L.L.B. 1951, The George Washington University		Robinson, Julius Louis	Ys
Redmond, Joseph C., Jr.	Md.	B.S. 1944, University of Illinois	Ys
B.E.E. 1948, The George Washington University		Robson, John Theodore	Ys
Reese, Constance Fryer	Calif.	A.B. 1947, B.S. 1958, University of Washington	Ys
A.B. 1950, The George Washington University		M.D. 1943, University of Oregon	Ys
Regan, John Vincent	D.C.	M.S. 1946, University of Minnesota	Ys
B.S. in E.E. 1950, Tufts College		Roche, James Francis	Ys
Reich, Joseph Daniel	D.C.	B.S. 1943, Rhode Island State College	Ys
A.B. 1952, The George Washington University		Rodder, Robert Gerald	Ys
Reid, Joseph Bernard	D.C.	A.B. 1941, University of Pittsburgh	Ys
A.B. 1950, A.M. 1951, The George Washington University		Rodgers, Elizabeth Bertha	Ys
Reiner, Julian Carroll	Fla.	A.B. 1945, Smith College	Ys
B.S. in Aero. Eng. 1948, University of Michigan		Rosen, Michael Edward	Ys
Reit, Richard John	Minn.	B.S. 1948, Columbia University	Ys
B.S. Eng. 1950, Iowa State College of Agriculture and Mechanic Arts		Rosenberg, Frederick William	Ys
Reque, Robert Russell	D.C.	A.B. 1950, Yale University	Ys
Rich, Donald Jenkins	Md.	Roskin, Arlin Fwing	Ys
Richardson, Robert Owen	Va.	A.B. 1952, Dickinson College	Ys
L.L.B. 1946, Drury College		Rolander, Robert Dale	Ys
Richitelli, Edward	Mass.	B.S. 1950, University of Colorado	Ys
B.S. 1950, Georgetown University		Rolinec, Rudolph Valentin	D.C.
Ridder, Alvin Joseph	Pa.	B.S. in E.E. 1949, University of Pittsburgh	Ys
B.E.E. 1949, Catholic University of America		Roller, Frank Coiner	D.C.
Riley, Wallace Don	Mich.	B.S. 1949, University of Arizona	Ys
Ph.B. 1947, University of Chicago		Rolph, John Fletcher III	Ys
B.B.A. 1949, M.B.A. L.L.B. 1952, University of Michigan		Rombouts, Robert Marvin	Ys
Rinehart, Albert Walton	Md.	A.B. 1951, Michigan State College	Ys
B. of Arch. Eng. 1949, Catholic University of America		Romney, Keith Bradford	Ys
Rios Lago, Miguel Juan	Puerto Rico	B.S. 1952, University of Utah	Ys
A.B. 1951, The George Washington University		Romney, Vernon Bradford	Ys
Rivier, Robert Lorain	W Va.	B.S. 1948, University of Utah	Ys
A.B. 1947, Shepherd College		Ross, John Prick	Ys
Rodriguez, Fred Monks	Md.	A.B. 1940, Princeton University	Ys
B.M.E. 1949, The George Washington University		A.M. 1941, Fletcher School of Law and Diplomacy	Ys
Rosenbach, Irvin John	Md.	Ross, Neil Mervyn	Ys
A.B. 1950, University of Maryland		B.S. in M.E. 1949, Northwestern University	Ys
Rossman, Dean Vincent	Tex.	Rosenberg, Harvey	Ys
Rivera, Albert	N.M.	A.B. 1947, L.L.B. 1950, University of Texas	Ys
B.S. 1952, American University		Rosenfeld, Harvey	Ys
Roemer, James Mahan	D.C.	B.S. 1951, University of Maryland	Ys
B.C.E. 1950, L.L.B. 1953, George Washington University		Rosenfeld, Sidney Nathan	Ys
		B.S. 1951, University of Maryland	Ys
		Rosenham, Louis	Ys
		A.B. 1948, Brooklyn College	Ys
		A.M. 1949, New York University	Ys
		Rosenthal, Helen Miller	Ys
		A.B. 1950, Wellesley College	Ys

Schwartz, Sol	N.Y.	Silverman, Ely	N.Y.
B.Ch.E., 1948, College of the City of New York		B.S., 1947, Columbia University	N.Y.
Schwitzer, H. George	D.C.	Silverstein, Ruth Elizabeth	Va.
A.B., 1949, 1949 College		B.B.A., 1947, College of the City of New York	
Sesawna, Richard Salvatore	Pa.	Simpson, Jack Byron	Va.
B.S. in E.E., 1949, Lafayette College		A.B., 1943, Ashham College	
Scott, Dana Lee	Va.	A.M., 1955, The George Washington University	
A.B., 1949, Yale University		Sims, Edgar, Jr.	Pa.
Scott, Lawrence Taylor	Md.	B.S., 1951, East Tennessee State College	
B.S., 1950, Niagara University		Singer, Allen Milton	D.C.
Scribner, Albert Willis	Md.	A.B., 1954, The George Washington University	
B.S., 1949, Northeastern University		Sipkor, Iwan Dinatov	Mo.
M.S., 1950, University of New Hampshire		L.L.B., 1948, University of Sofia	
Seabough, Paul William	Mo.	L.L.D., 1942, University of Innsbruck	
A.B., B.S., 1942, University of Missouri		Sippel, Kenneth Fred	Mo.
Sella, Harry George	Va.	A.B., 1950, University of California	
A.B., 1949, University of Pittsburgh		Siakind, Elton I.	Pa.
Seltzer, Eric	D.C.	A.B., 1945, Johns Hopkins University	
A.B., 1951, The George Washington University		Sitz, Walter Hoernch	
Servais, Raymond Alois	Wis.	B.S., 1946, United States Naval Academy	
A.B., 1950, The George Washington University		M.S., 1954, Massachusetts Institute of Technology	
Sessler, Albert Louis, Jr.	Va.	L.L.B., 1952, The George Washington University	N.Y.
B.S., 1950, Iowa State College of Agriculture and Mechanic Arts		Skalak, Rose	Va.
Sever, Francis Neal	S.D.	B.S., 1946, Columbia University	
A.B., 1951, University of South Dakota		Skilman, Douglas Benjamin	Wis.
Sewell, Toxey Hannon	Ala.	B.S., 1942, Pennsylvania State College	
B.S., 1941, L.L.B., 1948, University of Alabama		Slayton, Florine Margaret	Pa.
Shain, Harold	Conn.	A.B., 1942, University of Oklahoma	
B.S., 1949, University of Connecticut		Slenker, Norman Frederick	Conn.
Shalowitz, Ernest Maurice	D.C.	A.B., 1954, Ohio Wesleyan University	
A.B., 1951, The George Washington University		Smetali, Angelo John	Va.
Shanklin, Jay Edwin	D.C.	A.B., 1949, Indiana University	
A.B., 1952, Washburn Municipal University of Lapeka		Smith, Charles William	D.C.
Sharkey, Walter Joseph	R.I.	A.B., 1951, The George Washington University	
A.B., 1950, Providence College		Smith, Delois Gennepore, Jr.	Va.
Shelde, Walter Franklin	Pa.	A.B., 1954, Yale University	
A.B., 1948, Princeton University		Smith, Donald Joseph	Pa.
L.L.B., 1952, The George Washington University		B.S. in C.E., 1950, Bucknell University	
Sherback, William John	Va.	Smith, Edgar Thomas	D.C.
B.S. in E.E., 1949, University of Wisconsin		B.S., 1951, Pennsylvania Military College	
Sherman, William Robert	Va.	Smith, George Peter	D.C.
B.S., 1946, University of Wisconsin		B.M.E., 1950, Cornell University	
Sherwood, James Steak	Va.	Smith, Gaudy Fay	Mo.
A.B., 1947, The George Washington University		Smith, Harold	
Shim, Nian Tong	Hawaii	A.B., 1951, The George Washington University	
L.L.B., 1948, University of Hawaii		Smith, Harold Calmes, Jr.	Pa.
Shuratt, Elizabeth Wise	Va.	A.B., 1950, The George Washington University	
A.B., 1947, Ohio University		Smith, James Donald	N.Y.
Shuster, Jacob	N.Y.	A.B., 1941, Municipal University of Omaha	
B.M.E., 1949, College of the City of New York		A.M., 1944, Western Reserve University	
Siegel, Abraham	Calif.	Smith, James Paul	Pa.
B.S., 1949, I.D., 1950, College of the City of New York		B.S., 1952, South Dakota School of Mines and Technology	
Siezmann, Peter	D.C.	Smith, James Joseph	D.C.
L.L.D., 1954, University of Iowa, Finland		B.S., 1950, Hamira College	
Silver, Richard A.	Mass.	Smith, Jennifer Taylor	
A.E., 1941, Boston University		A.B., 1950, The George Washington University	

Smith, Mildred Jonathan A.B. 1945, Bryn Mawr College	D.C.	Stein, Stefan Martin A.B. 1948, Cornell University	N.Y.
Smith, Thomas Eugene B.S. 1951, University of Missouri	Mo.	Stelott, Arthur Simon B.S. 1946, United States Naval Academy	N.J.
Smith, William Bruce A.B. 1946, Lynchburg College	Va.	Stephens, John A.B. 1946, The George Washington University	Fla.
Smith, Leonard R. LL.B. 1951, Cornell University	N.Y.	Stephens, Richard Glenn B.S. & L.L.B. 1948, Purdue University	Ind.
Spicer, Milton Joseph B.A. 1946, University of Maryland	D.C.	Stern, Edward Arthur A.B. 1942, University of Florida	Fla.
Spicer, Marvin Clarence B.C.A. 1949, Cornell University	D.C.	Stenberg, Arnold Charles A.B. 1947, University of Wisconsin	Mass.
Spicer, William Donald, Jr. B.M.E. 1948, Rensselaer Polytechnic Institute	Md.	Stevenson, Malcolm, Seale A.B. 1946, Bowdoin College	Maine
Sorce, Frank James B.E. 1948, The George Washington University	D.C.	Stewart, Milton David A.B. 1941, New York University	N.Y.
Spicer, George Klepfer LL.B. 1952, The George Washington University	Md.	Stewart, S. Grant B.S.C. 1934, University of Nebraska	Okla.
Spicer, Clarence Wilbur B.E. 1945, Yale University	Va.	Stiel, Maurice Ben B.S. 1941, University of Pennsylvania	Pa.
Spicer, John Henry A.B. 1949, The George Washington University	D.C.	Stilmar, Robert Louis B.E. 1949, Yale University	D.C.
Spicer, Harvey Milton A.B. 1942, Brown University	R.I.	Stirling, Edwin T. Luman B.S. 1951, The George Washington University	D.C.
Spicer, William A.M. 1949, H.M. 1952, The George Washington University		Stitel, William Lloyd, Jr. B.S. 1952, East Carolina Teachers College	Va.
Spicer, Richard Albert B.M.E. 1952, Ohio State University	Ohio	Stitelman, Joseph B.S. & L.L.B. 1934, Cooper Union	D.C.
Spicer, Charles E., Jr. A.B. 1949, The George Washington University	Idaho	Stitt Nelson Alexander A.B. 1950, University of Pittsburgh	Va.
Spicer, George Henry LL.B. 1952, Cornell University	N.Y.	Stitt, John LL.B. 1942, The George Washington University	
Spicer, Arthur Aaron B.A. 1946, College of the City of New York	Md.	Stoddard, John Milton A.B. 1951, LL.B. 1948, University of Alabama	Ala.
Spicer, Robert Malcolm A.B. 1946, Bucknell University		Storck, Karl LL.B. 1950, University of Erlangen, Germany	Md.
Spicer, John Paul A.B. 1950, University of Maryland	N.J.	Stokes, Theodore H., Jr. B.S. 1947, University of Southern California	Calif.
Spicer, James A.B. 1950, Cooper Union	Pa.	Stolman, Walter B.S. 1947, College of the City of New York	D.C.
Spicer, Edward Andrew A.B. 1941, Purdue University	N.Y.	Stonak, John H. B.S. 1952, University of Maryland	D.C.
Spicer, William A.B. 1949, The George Washington University	Md.	Stonak, Matthew B.S. 1951, University of Pennsylvania	N.Y.
Spicer, Harold Eugene A.B. 1949, University of Pennsylvania	Pa.	Stover, James Robert B.M.E. 1948, Catholic University of America	Va.
Spicer, Ralph Ronald LL.B. 1951, University of Oregon	Oreg.	Stover, Joseph Glenn A.B. 1951, Dickinson College	Pa.
Spicer, Louis LL.B. 1951, Louisiana State University		Strass, Hans LL.D. 1945, University of Cologne	N.Y.
Spicer, John Regan M.B. 1949, Cornell University	Va.	Strasser, Robert Edward B.S. & L.L.B. 1948, Pennsylvania State College	D.C.
Spicer, A. Fred B.M.E. 1949, University of	Md.	Strong, Gale J. LL.B. 1942, LL.M. 1950, The George Washington University	Pa.
Spicer, William LaMar A.B. 1949, Georgetown University	Fla.	Strupp, Werner A.B. 1946, The George Washington University	Md.
Spicer, Robert A.B. 1949, Bowdoin College	Va.	Stuart, Kenneth Earl	Ind.

Sturt, Daniel Webster	Va.	Tharp, Norman Ray	
B.S. 1947, Virginia Polytechnic Institute		B.S. in B.A. 1943, Ohio State University	
M.S. 1949, University of Wisconsin		LL.B. 1950, St. Louis University	
Sullivan, Donald Emmett	Md.	Theobald, Frederick Henry	
A.B. 1941, M.S. 1942, Fordham University		Theurer, Gary Lloyd	
Sullivan, Patrick Gerald	Tex.	B.S. 1951, Utah State Agricultural College	
B.S. Mining Eng. 1940, University of Texas		Thomas, Francis DeLashmott, Jr.	
Sullivan, Ralph Hall	Mass.	A.B. 1951, Dartmouth College	
B.B.A. 1942, Boston University		Thomas, Nancy	
M.S. 1949, Simmons College		A.B. 1952, The George Washington University	
LL.B. 1944, The George Washington University		Thomas, William Bates	
Sullivan, Ronald Frederick	Calif.	A.B. 1951, The George Washington University	
A.B. 1941, Stanford University		Thompson, Garland Parnell	
Summer, Leonard	N.Y.	Thompson, Loudoun L.	
B.S. 1933, M.S. 1938, College of the City of New York		A.B. 1940, West Virginia University	
Summers, Clifford Clinton	Md.	Thompson, Matthew Charles	
A.B. 1941, University of Missouri		B.S. in Ch.E. 1940, Iowa State College of Agriculture and Mechanic Arts	
Summersville, David Harold	Pa.	Thompson, Robert Lee	
A.B. 1942, Grove City College		A.B. 1952, The George Washington University	
Surasky, Bernard Arthur	D.C.	Thompson, Wallace Eugene	
A.B. 1940, The George Washington University		A.B. 1942, University of North Carolina	
Sweeney, Edwin Cornelius	Ill.	Threlk, Irving Russell	
A.B. 1942, University of Kentucky		A.B. 1952, Washburn College	
M.D. 1942, Tulane University		Toblers, Robert Carl	
Sweeney, Stuart Hackett	Md.	A.B. 1941, The George Washington University	
A.B. 1942, Lipscomb College		Tierney, John Lester	
Sweeney, Vincent Hilary	Mass.	A.B. 1949, University of Maryland	
B.S. 1940, Boston College		LL.B. 1948, University of Washington	
Sweeney, Robert Louis	Mo.	Tinsley, William Garvin	
A.B. 1948, LL.B. 1951, St. Louis University		A.B. 1949, Centre College of Kentucky	
Sykes, Richard Tucker	Calif.	Tipton, Frank Preston	
T		B.S. 1941, University of Georgia	
		Toll, David Ross	
Taffet, Hana	N.Y.	B.S. in E.E. 1946, United States Naval Academy	
A.B. 1949, The George Washington University		Tomes, James Francis	
Takane, George Morito	Hawaii	B.S. 1942, University of Maryland	
A.B. 1949, University of Hawaii		Tomlinson, Robert Parrish	
Tanaka, Hideo William	Calif.	B.S. 1944, Virginia Polytechnic Institute	
A.B. 1949, University of California at Los Angeles		LL.B. 1949, University of Richmond	
Tanos, James Demetri	Va.	Townsend, Thomas Nelson	
A.B. 1949, University of Pennsylvania		A.B. 1941, Municipal University of Omaha	
Taton, James Stanley	Va.	Travis, William Livingston	
A.B. 1948, Northwestern State College of Louisiana		B.S. 1941, United States Military Academy	
Taylor, Andrew Eastgate	D.C.	Treiman, Walter	
B.S. in M.E. 1947, Tufts College		A.B. 1946, Washington University	
Taylor, Daniel Gerald	Va.	A.M. 1948, University of Chicago	
A.B. 1949, Salem College		Trevino, Daniel Kildan, Jr.	
Taylor, Eben Lucius	Va.	B.B.A. 1948, University of Texas	
LL.B. 1941, The George Washington University		Trumble, Sarah III	
Taylor, James Robert	Va.	B.S. 1948, University of North Carolina	
A.B. 1941, University of Chicago		Triplett, William Everett	
Temper, Milton Leo	Va.	B.S. 1947, Georgetown University	
A.B. 1948, A.M. 1949, New York University		Tron, Robert Augustus, Jr.	
Terry, George Melford	Md.	A.B. 1941, The George Washington University	
B.S. 1947, The George Washington University			
Terry, Luke Edward	W.Va.		
B.S. 1948, University of Tennessee			
M.S. 1949, West Virginia University			

Trish, Edward Harry B.B.A. 1949, College of the City of New York LL.B. 1952, Columbia University	N.Y.	Varmer, Borge Kvamme Cand. Juris 1950, University of Copenhagen	Md.
Tucker, Simon B.S. 1949, College of the City of New York M.P.A. 1949, New York University	Va.	Varmer, Glenn Kvamme Cand. Juris 1951, University of Copenhagen	Md.
Tungel, Kenneth Welch A.B. 1952, Cornell University	Pa.	Vary, Willis Leavenworth B.L.L. 1951, The George Washington University	Va.
Turrent, Anthony Joseph B.S. 1945, M.S. 1947, Pennsylvania State University	Pa.	Vaughn, John W. A.B. 1952, Stanford University	Mo.
LL.B. 1951, The George Washington University		Vautrain, Charles Edward, Jr. B.S. 1941, United States Coast Guard Academy	Mass.
Tupper, Irving B.S. 1941, LL.B. 1948, Georgetown University	Va.	Vegg, Louis A.B. in Ed. 1944, University of Puerto Rico	D.C.
M.A. 1946, The George Washington University		Vellone, Joseph A.B. 1934, New Jersey State Teachers College, Montclair	N.J.
Tupper, Joseph Morton A.B. 1940, Westminster College	Oreg.	Vernor, Richard Eugene A.B. 1939, University of Oklahoma	Okla.
Tupper, Warren Jewett B.S. in Ed. 1948, University of Maine	Maine	Vogel, Ralph Henry B.S. 1946, Harvard University	Va.
U Tupper, Thomas Edward B.S. 1951, University of Maryland	D.C.	Von Brand, Theodor Philip A.B. 1936, Brown University	Md.
U Tupper, Robert Mathew A.B. 1940, Duquesne University	Va.	Von Kott, Pender Magistat 1945, University of Zurich	Switzerland
Tupper, Henry Coleman A.B. 1940, Harvard University	Mass.	W Wals, Norman M.B.A. 1948, Harvard University	Va.
Tupper, Jess Paul B.S. 1941, United States Military Academy	Ill.	Walker, Peter Brockway A.B. 1942, Harvard University	D.C.
M.A. in C.E. 1949, University of Illinois		Walker, Robert Williams B.S. 1940, United States Naval Academy	Okla.
Willard, Clifton B.M.F. 1948, College of the City of New York	Md.	Walker, William David A.B. 1936, Cornell University	D.C.
Willard, Edward William A.B. 1940, Fordham College	Conn.	Wallace, George C. A.B. 1941, University of Pittsburgh	D.C.
Willard, Henry Herman M.A. 1941, University of Vienna	D.C.	Wallace, Charles William B.E.F. 1951, Catholic University of America	Md.
Willard, John T. A.B. 1940, Cornell College	Hawaii	Warner, John William B.S. 1940, Washington and Lee University	D.C.
Willard, John Robert B.S. 1942, University of Maryland	Md.	Warnock, Charles Webster A.B. 1941, Berea College	Ohio
V Willard, Wilfred Napoleon A.B. 1941, University of New Hampshire	N.H.	Wason, Lewis Hugh Wasson, Robert Vernon A.B. 1940, The George Washington University	Pa. Calif.
Willard, Armando Jr. B.S. 1942, Georgetown University	Philippines	Waters, Joe Edward B.S. 1938, Georgetown University	Ky.
Willard, Andrew Jackson B.S. 1940, United States Naval Academy	Fla.	Watson, David James, Jr. A.B. 1940, M.B.K. 1941, University of Maryland	Md.
Willard, John S. LL.B. 1952, University of Alabama	Ala.	Watson, Jack Wilbur A.B. 1938, Iowa State University	Iowa
Willard, John LL.B. 1952, University of Alabama	Ala.	Watson, Lashelle Homer S.I.D. 1931, University of Bonn Germany	Va.
Willard, Gordon Myron LL.B. 1940, The George Washington University	D.C.	Weaver, David Paul A.B. 1948, Washington College, Md.	Md.
		Weaver, William Charles A.B. 1930, West Virginia University	W.Va.

Weber, Arnold Isidor	D.C.	Wienecke, Edward Rudolph	D.C.
Ph.B. 1949, Marquette University		L.L.B. 1950, University of Florida	Fla.
A.M. 1950, Harvard University		Wilder, Leo	N.Y.
Webster, Robert Oswald	Wash.	B.S. 1949, College of the City	
B.N.E. 1947, Ohio State		of New York	
University		Wilkes, Charles Latimer	D.C.
Wedel, Retford James	Kans.	A.B. 1950, Dartmouth College	
A.B. 1949, Bethel College		Wilkes, James Claiborne, Jr.	Tenn.
Weil, Gerald Gordon	N.Y.	A.B. 1950, Dartmouth College	
B.S. 1948, Washington and Jefferson		Williams, Henry Barton	
College		B.S. 1941, United States Naval	
Weisblatt, Irving	D.C.	Academy	
A.B. 1952, The George Washington		L.L.B. 1952, Vanderbilt University	N.C.
University		Williams, Neal Earl, Jr.	
Weise, Allen Gardner	Md.	B.S. 1949, United States Coast Guard	
B.S. 1948, The George Washington		Academy	
University		Williams, Stacy Leon	Tenn.
Weiss, Rowena	D.C.	Wilman, Shraga	
B.Ch.E. 1949, Catholic University		Wilson, Jack	Kent.
of America		L.L.B. 1956, University of Tennessee	
Weiss, Sherwin Elihu	N.Y.	Wilson, Thomas Bayne	N.Y.
A.B. 1950, Brooklyn College		A.B. 1949, University of Kansas	
Welch, Richard Noel	Tenn.	Wilton, Robert Harlan	
B.S. 1949, Memphis State College		A.B. 1948, A.M. 1952, Syracuse	D.C.
Wellington, Peretz	Va.	University	
A.B. 1952, The George Washington		Witcomb, Sheldon William	D.C.
University		B.S. 1949, University of Maryland	
Wells, Edward C.	Ohio	Wolf, Zev Leopold	N.Y.
Wells, Robert Oscar, Jr.	Mich.	B.S. 1951, Northwestern University	
A.B. 1952, The George Washington		Wolman, Harold	D.C.
University		B.S. 1942, College of the City of	
Werbow, Farrell Roy	D.C.	New York	
B.S. 1951, The George Washington		Wood, Charles Bryant	S.C.
University		A.B. 1951, American University	
Werth, Michael W.	Md.	Wood, Harry Eugene	Tenn.
B.S. in I.E. 1948, Illinois Institute		L.L.B. 1952, The George Washington	
of Technology		University	
Wertz, Charles Robert	Ohio	Wood, Thomas Bennett	
B.S. 1952, Ohio State University		Woodall, Thomas Woodrow	
West, Norman Axel	Va.	B.S. 1948, Wake Forest College	
A.B. 1949, University of Richmond		Workinger, George Samuel	
Westcott, Raymond Arthur	Va.	A.B. 1951, The George Washington	
Weston, Megan Louise	Va.	University	
A.B. 1948, Stanford University		Wortman, David Morris	
Wetherbee, Farland Henry	Md.	A.B. 1948, I.L.B. 1951, The George	
White, Arthur Richard	Va.	Washington University	
B.S. in Ch.E. 1945, Northwestern		Wray, William Neal	
University		B.S. 1952, University of Maryland	
Whelan, Charles Henry	Conn.	Wren, Donald Duncan	
A.B. 1951, Brown University		A.B. 1951, Westminster College	
Whelan, Martin Edward, Jr.	Calif.	Wren, Edgar Alban	
A.B. 1949, University of Santa Clara		L.L.B. 1948, Georgetown University	
L.L.B. 1951, Loyola University		Wright, Dale Alan	
White, Alfred Lawson	Md.	B.S. 1948, Carnegie Institute of	
White, Edwin Ruden, Jr.	Fla.	Technology	
A.B. 1944, Emory University		L.L.B. 1952, The George Washington	
White, Robert Belamine	D.C.	University	
White, Robert Francis	Mass.	Wright, John Grant	
B.S. 1951, Northeastern University		B.B.A. 1949, Southern Methodist	
Whitesilver, Kenneth Tynes	Va.	University	
A.B. 1942, Hardin-Simmons University		Wright, Lorena Shepherd	
Whiting, Dinty	Fla.	A.B. 1947, University of Pennsylvania	
B.S. 1949, Georgetown University		Wyatt, John Walton	
Whitney, Courtney, Jr.	D.C.	L.L.B. 1947, University of Florida	
A.B. 1949, Yale University		L.L.M. 1950, The George Washington	
Whitney, George Ward	N.Y.	University	
B.E.E. 1949, Rensselaer Polytechnic		Wymer, Max Lee	
Institute		B.S. in Ch.E. 1947, University of	
Whittington, Otto Wiseman	D.C.	Kansas	
B.S. in P.A. 1951, University of		Yabko, Elias Perfeccion	
Arkansas		A.B. 1948, University of Hawaii	
Wickline, Harry F.	Mo.		

Yaplee, Benjamin Soone B.S. in E.E. 1947, University of Washington	Wash	Zickert, Lloyd Lynn B.S. in M.E. 1950, Purdue University	Va.
Yates, John Russell, Jr. A.B. 1962, Randolph-Macon College	D.C.	Ziegler, Herman Joseph A.B. 1951, The George Washington University	N.J.
Yeager, Philip Brand A.B. 1919, University of Arizona	Va	Zoarski, Howard Francis B.S. 1952, University of Maryland	Conn.
Yim, William Harry A.B. 1949, University of Hawaii	Hawaii	Zondag, Cornelius Henry J.D. 1948, Loyola University	D.C.
Young, David B.M.E. 1949, Cooper Union	D.C.	Zubeck, John Thomas A.B. 1951, The George Washington University	Pa.
Young, Francis Wasland B.S. in M.E. 1950, University of Alabama	Ala	Zugel, Mary Jean A.B. 1951, The George Washington University	Md.
Young, John Thomas A.B. 1950, University of Maine	Maine	Zummer, Anthony Simon B.S. in M.E. 1950, Purdue University	Ill.
Zeldner, Philip M. Zet, James A.B. 1938, Middlebury College LL.B. 1943, Syracuse University	Z N.Y. Va.		

SUMMARIES OF REGISTRATION

SUMMER TERM 1952

FALL AND SPRING TERMS 1952-53

GEOGRAPHICAL DISTRIBUTION OF STUDENTS

United States, Territories, and Possessions

Alabama	11	New Jersey	10
Arizona	4	New Mexico	114
Arkansas	2	New York	10
California	26	North Carolina	3
Colorado	6	North Dakota	27
Connecticut	19	Ohio	0
Delaware	3	Oklahoma	0
District of Columbia	269	Oregon	88
Florida	18	Pennsylvania	11
Georgia	8	Rhode Island	8
Idaho	5	South Carolina	3
Illinois	31	South Dakota	0
Indiana	11	Tennessee	10
Iowa	7	Texas	10
Kansas	9	Utah	1
Kentucky	9	Vermont	218
Louisiana	4	Virginia	0
Maine	8	Washington	24
Maryland	178	West Virginia	7
Massachusetts	29	Wisconsin	3
Michigan	18	Wyoming	11
Minnesota	7	Hawaii	1
Mississippi	2	Puerto Rico	1
Missouri	14	Afghanistan	4
Montana	3	France	1
Nebraska	7	Philippines	
Nevada	4	Switzerland	
New Hampshire	6		

GRADUATES OF COLLEGES REGISTERED IN THE LAW SCHOOL

Academy of International Law, The Hague	1	Baylor University	2
Alabama Polytechnic Institute	1	Belgrade, University of, Yugoslavia	2
Alabama, University of	10	Berea College	1
Aubright College	1	Bethany College	1
Allegheny College	1	Bethel College	4
American University	10	Bonn, University of, Germany	5
Arizona State College	1	Boston College	1
Arizona, University of	3	Boston University	1
Arkansas, University of	2	Bowdoin College	6
Augustana College	1	Bridgewater College	7
Ball State Teachers College	1	Brigham Young University	
Barnard College	1	Brooklyn College	

Brooklyn, Polytechnic Institute of	1	Erlangen, University of, Germany	1
Brown University	6	Fagui, University of	1
Bryn Mawr College	1	Far Eastern University	1
Bucharest, University of, Rumania	1	Fenn College	1
Budapest, University of, Hungary	3	Fletcher School of Law and Diplomacy	3
Bullard, University of	1	Florence, University of, Italy	1
California Institute of Technology	4	Florida Southern College	1
California, University of	6	Florida State University	2
California, University of, at Los Angeles	3	Florida, University of	8
Canisius College	1	Fordham University	4
Carleton College	1	Fouad I, University of, Egypt	1
Carnegie Institute of Technology	3	Franklin and Marshal College	1
Carnegie Institute of Technology	4	Gannon College	1
Catholic University of America	17	Geneva, University of, Switzerland	4
Central College, Mo.	2	Genoa, University of, Italy	1
Central Michigan State College of Education	1	George Washington University, The	218
Central State College	1	Georgetown University	31
Centre College of Kentucky	1	Georgia Institute of Technology	4
Chattanooga, University of	1	Georgia, University of	5
Chicago, University of	9	Gettysburg College	3
Cincinnati, University of	2	Grinnel College	2
Cinzel, The	2	Grove City College	2
Cork University	2	Hahnemann Medical College	1
Carlson College of Technology	1	Hardin-Simmons University	1
Casper University	2	Hartford College of Law	1
Casane, University of, Germany	3	Harvard University	26
Cattaraugus, University of	1	Haverford College	2
Columbia University	3	Hawaii, University of	10
Cornell University	24	Hofstra College	1
Cornell College	1	Holy Cross, College of the	4
Connecticut, University of	1	Hunter College	3
Copper Union	4	Idaho State College	1
Copenhagen, University of, Denmark	7	Idaho, University of	3
Cornell University	1	Illinois College	1
Cranston, University of, Poland	22	Illinois Institute of Technology	1
Dartmouth College	1	Illinois, University of	15
Davidson College	6	Illinois Wesleyan University	1
Dawson, University of	1	Indiana University	6
DePauw University	2	Innsbruck, University of, Austria	1
Detroit, University of	4	Iona College	1
Drexel University	2	Iowa State College of Agriculture and Mechanic Arts	5
Duke College	6	Iowa State Teachers College	1
Durham University	1	Iowa, State University of	6
East Carolina University	4	Jamestown College	1
East Carolina Teachers College	1	Jerusalem, University of	1
East Tennessee State College	2	Johns Hopkins University	6
Eastern College	1	Juniata College	1
Eastern University	2	Kabul, University of, Afghanistan	1
Eastern University	1	Kalamazoo College	1
Eastern University	2	Kansas City, University of	1
Eastern University	2	Kansas State College of Agriculture and Applied Science	4

Kansas, University of	3	New Jersey State Teachers	1
Kentucky, University of	3	College, Montclair	29
Kenyon College	2	New York, College of the City of	1
Knox College	1	New York State Teachers College,	1
Lafayette College	1	Buffalo	10
Lawrence College	1	New York University	1
Lebanon Valley College	2	Niagara University	13
Lehigh University	4	North Carolina, University of	1
Leyden University, Netherlands ..	1	North Central College	1
London, University of	1	North Texas State Teachers Col-	1
Louisiana State University	5	lege	1
Louisville, University of	2	Northeastern State College	5
Loyola University	2	Northeastern University	1
Lwow, University of, Poland	1	Northern Illinois State Teachers	1
Lynchburg College	1	College	1
Lyon, University of, France	1	Northwestern State College of	1
MacMurray College	1	Louisiana	9
Maine, University of	3	Northwestern University	1
Manhattan College	1	Norwich University	4
Manuel Luis Quezon College,	1	Notre Dame, University of	1
Philippines	1	Oberlin College	13
Marietta College	2	Ohio State University	1
Marquette University	1	Ohio University	3
Marshall College	2	Ohio Wesleyan University	1
Maryland, University of	56	Oklahoma Agricultural and Me-	1
Marywood College	1	chanical College	8
Massachusetts Institute of Tech-	1	Oklahoma, University of	3
nology	8	Oregon, University of	3
Massachusetts State College	1	Paris, University of, France	19
Memphis State College	2	Pennsylvania Military College	1
Mercer University	1	Pennsylvania State College	1
Miami University	3	Pennsylvania State Teachers Col-	1
Miami, University of	5	lege, East Stroudsburg	1
Michigan College of Mining and	1	Pennsylvania State Teachers Col-	1
Technology	1	lege, Indiana	1
Michigan State College	4	Pennsylvania State Teachers Col-	1
Michigan, University of	17	lege, Mansfield	1
Middlebury College	1	Pennsylvania State Teachers Col-	1
Middle Temple, England	1	lege West Chester	1
Milwaukee School of Engineering ..	1	Pennsylvania, University of	15
Minnesota, University of	10	Philippines, University of	1
Mississippi State College	2	Pittsburgh, University of	1
Mississippi, University of	3	Pomona College	6
Missouri, University of	12	Prague, University of, Poland	1
Monmouth College	1	Princeton University	1
Montana State University	1	Principia College	2
Morris Harvey College	3	Providence College	8
Mount St. Mary College	1	Puerto Rico, University of	1
Muhlenberg College	2	Purdue University	1
Municipal University of Omaha ..	1	Radcliffe College	1
Nazareth College	1	Randolph-Macon College	10
Nebraska, University of	3	Reed College	1
Nevada, University of	1	Rensselaer Polytechnic Institute ..	1
New Hampshire, University of ..	8	Rhode Island State College	1
		Rhode Island, University of	1

SUMMARY OF LAW SCHOOL REGISTRATION

FALL 1952-53

	Men	Women	Total
First year	378	0	378
Second year	257	0	257
Third year	221	2	223
Candidates for the degree of Master of Laws	67	1	68
Candidates for the degree of Master of Comparative Law	13	0	13
Candidates for the degree of Master of Comparative Law (American Practice)	10	0	10
Candidates for the degree of Doctor of Juridical Science	8	1	9
Unclassified	30	—	30
Total.....	993	28	1021

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1953-54

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WASHINGTON, D. C.

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BY THE UNIVERSITY

THE
HISTORY
OF THE
CITY OF
NEW YORK
FROM
1624 TO 1898

BY
JOHN EDGAR HOOVER

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CALENDAR 1953-54

Date	Day	Occasion
1953		
FALL TERM:		
Sept. 21	Monday	Orientation Assembly for new students
Sept. 22	Tuesday	Freshman tests Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Sept. 23	Wednesday	Curriculum Assembly for new students
Sept. 24 and 25	Thursday and Friday	Presiding over new students
Sept. 28	Monday	Registration
Oct. 9	Friday	Academic year begins Last day on which candidates may file thesis subjects for the Master's degrees to be conferred in February
Nov. 11	Wednesday	Fall Convocation. Holiday
Nov. 26-28	Thursday through Saturday	Thanksgiving recess
Dec. 21-Jan. 2	Monday through Saturday	Christmas recess
1954		
Jan. 4	Monday	Classes resume
Jan. 8	Friday	Last day for receiving thesis candidates for the Master's degrees and for the spring session degrees in January to be conferred in February
Jan. 20	Wednesday	Last day of classes for the term
Jan. 25-Feb. 2	Monday through Tuesday	Fall term examination period
SPRING TERM:		
Feb. 3	Wednesday	Examinations for students who wish to qualify for advanced courses or waive curriculum requirements
Feb. 4 and 5	Thursday and Friday	Registration
Feb. 8	Monday	Classes resume for the spring term
Feb. 10	Friday	Last day on which candidates may file thesis subjects for the Master's degrees to be conferred in June

Date	Day	Occasion
Feb 22.....	Monday	Winter Convocation. Holiday Applications for scholarships for 1954-55 should be filed
April 1.....	Thursday	
April 16-21.....	Friday through Wednesday	Easter recess Last day for receiving theses of candidates for the Master's degrees and for the profes- sional degrees in Engineering to be conferred in June
May 7.....	Friday	
May 19.....	Wednesday	Last day of classes for the spring term
May 24-June 1...	Monday through Tuesday	Spring term examination period Baccalaureate Sermon Commencement Registration for the fall term of the academic year 1954-55
June 6.....	Sunday	
June 9.....	Wednesday	
Sept 23 and 24...	Thursday and Friday.	

THE UNIVERSITY

THE BOARD OF TRUSTEES

The Board of Trustees of the University is composed of the President of the University ex officio and the following persons by election:

- Robert Vedder Fleming, LL.D., *Chairman*
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-
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 *Charles Stanley White, M.D., Sc.D.
 Louis Bennett Wilson
 *Frank Lloyd Yates, A.B., LL.B.

*Nominated by the alumni.

OFFICERS OF ADMINISTRATION

THE UNIVERSITY

Cloyd Heck Marvin, Ph.D., LL.D., *President of the University*
 Oswald Symister Colclough, B.S., LL.B., LL.D., *Dean of Faculties*
 Myrna Pauline Sedgwick, A.B., *Administrative Secretary*
 Henry William Herzog, B.S., *Treasurer*
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 Burnice Herman Jarman, A.M., Ed.D., *Director of the Summer Session*
 Daniel LeRay Borden, A.M., M.D., *Director of Health Administration*
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 Don Carlos Faith, Ph.D., *Director of Veterans Education*
 Benjamin Douglass Van Evera, Ph.D., *Coordinator of Scientific Activities*
 Lawrence Daniel Folkemer, Ph.D., *Director of Religious Activities*

THE COLLEGES, SCHOOLS, AND DIVISIONS

Myron Law Koenig, Ph.D., *Dean of the Junior College*
 Henry Grattan Doyle, A.M., LL.D., Litt.D., *Dean of Columbian College*
 Robert Whitney Bolwell, Ph.D., *Chairman of the Graduate Council*
 Walter Andrew Bloedorn, A.M., M.D., Sc.D., *Dean of the School of*

Medicine

John Theodore Fey, LL.B., M.B.A., J.S.D., *Acting Dean of the Law School*

Martin Alexander Mason, B.S. in Eng., Ing.-Dr., *Dean of the School of*

Engineering

Charles Watson Bliven, M.S., *Dean of the School of Pharmacy*
 James Harold Fox, A.M., Ed.D., *Dean of the School of Education*
 Arthur Edward Burns, Ph.D., *Dean of the School of Government*
 Elmer Louis Kayser, Ph.D., LL.D., *Dean of the Division of University*

Students; University Marshal

Warren Reed West, Ph.D., *Dean of the Division of Special Students*
 Mitchell Dreese, Ph.D., *Dean of the College of General Studies*
 Victor Frederick Ludewig, A.B., B.S., *Superintendent of the University*

Hospital

William Lewis Turner, Ph.D., *Assistant Dean of the Junior College*
 George Martin Koehl, A.M., *Assistant Dean in the Junior College*

- Carl Bartleson Lavell, A.M., *Assistant Dean in the Junior College*
Calvin Darlington Linton, Ph.D., *Assistant Dean of Columbian College*
Carville Dickinson Benson, A.B., LL.B., S.J.D., *Assistant Dean of the Law School*
Louis Harkey Mayo, B.S., LL.B., *Assistant Dean of the Law School*
Joe Lee Jessup, M.B.A., *Assistant Dean in the School of Government*
John Francis Latimer, Ph.D., *Assistant Dean of the College of General Studies*
John Gage Allee, Jr., A.M., *Assistant Dean of the Division of University Students*

HISTORY AND ORGANIZATION

HISTORY

The idea of a university located in the Capital of the Nation was sponsored by George Washington, who during his public life urged the establishment of such an institution and who in his will left fifty shares of stock in the Potomac (Canal) Company for the endowment of a university to be established in the District of Columbia "to which the youth of fortune and talents from all parts thereof might be sent for the completion of their Education in all the branches of polite literature,—in arts and Sciences,—in acquiring knowledge in the principles of Politics & good Government".

It was George Washington's hope that the "General Government" would extend toward such an institution "a fostering hand". No steps were taken by Congress to carry out the provision of Washington's will, and the stock that he had bequeathed for the establishment of a university in the District of Columbia became valueless owing to the failure of the Potomac Canal properties.

Meanwhile, however, a movement was started by private persons under the leadership of Luther Rice to establish an institution of higher learning at the seat of the National Government for the education of the Baptist ministry and to afford general collegiate training. In 1810 an association was formed by Luther Rice, Obadiah B. Brown, Spencer H. Cone, and Enoch Reynolds for the purpose of raising funds to buy land for the use of the college.

A group of the Nation's leaders who were especially interested in Washington's idea became patrons of the college and contributed to funds raised for the purchase of land and erection of buildings. Among them were James Monroe, President of the United States; William H. Crawford, Secretary of the Treasury; John C. Calhoun, Secretary of War; William Wirt, Attorney General; Return J. Meigs, Postmaster General; and thirty-two members of the Congress.

Legally to implement the college a petition was made to Congress for the incorporation of "the General Convention of the Baptist Denomination in the District of Columbia for evangelical and literary purposes". This petition was denied by Congress, on April 26, 1820, because of its sectarian character.

Failing to obtain a denominational charter, members of the association enlarged their objective to embrace national aims, and with the sponsorship of Government leaders there was presented in Congress a

bill for the incorporation of "the Columbian Society for literary purposes", it being proposed to realize in this way "the aspirations of Washington, Jefferson and Madison for the erection of a university at the seat of the federal government".

Acting upon this second petition, on February 9, 1821, Congress chartered Columbian College in the District of Columbia, inserting in the charter by special action the provision "That persons of every religious denomination shall be capable of being elected Trustees; nor shall any person, either as President, Professor, Tutor or pupil, be refused admittance into said College or denied any of the privileges, immunities or advantages thereof, for or on account of his sentiments in matters of religion".

Thus Columbian College in the District of Columbia was chartered by Congress as one of the early nonsectarian institutions of higher learning in the United States, under the distinguished favor of President James Monroe and members of his Cabinet.

A tract of approximately forty-seven acres, extending about one half mile northwest of Boundary Street (Florida Avenue) between Fourteenth and Fifteenth Streets, was purchased and by 1822 the main building was completed sufficiently to use.

Two years later, when the first Commencement was held on December 15, 1824, Congress and the Supreme Court adjourned their sessions to enable their members to attend the exercises. President Monroe, John Quincy Adams, John C. Calhoun, Henry Clay, and the Marquis de Lafayette headed the eminent company in attendance.

By an act of Congress of March 3, 1873, the name of the college was changed to "Columbian University", in recognition of the enlarged scope of the institution. In 1884 the University was moved from its first location on "College Hill", now Columbia Heights, to the new University Hall built for it at Fifteenth and H Streets. Near-by buildings accommodated the School of Medicine and, somewhat later, the Law School.

For a period of six years, from 1898 to 1904, the University was placed under control of the Baptist Denomination. In 1904 an act restoring the original secular character of the University and authorizing change of name to The George Washington University was passed by Congress.

Subsequently all the colleges, schools, and divisions of the University except the School of Medicine were brought together in the area bounded by Nineteenth, Twenty-third, and G Streets, and Pennsylvania Avenue NW. The School of Medicine is situated on H Street between Thirtieth and Fourteenth Streets NW.

The endowment of the University is \$3,250,000.

THE COLLEGES, SCHOOLS, AND DIVISIONS

The George Washington University includes fourteen colleges, schools, and divisions, as follows:

The Junior College offers the work of the first two years of the four-year college program in the liberal arts and sciences; two years of pre-professional work; and two-year terminal courses. Each of these curricula leads to the degree of Associate in Arts.

Columbian College offers the work of the junior and senior years of the four-year college program in the liberal arts and sciences leading to the degrees of Bachelor of Arts and Bachelor of Science. It also offers the studies leading to the degrees of Master of Arts and Master of Science in the fields of the liberal arts and sciences.

The Graduate Council offers a program of advanced study and research leading to the degree of Doctor of Philosophy.

The School of Medicine offers work leading to the degree of Doctor of Medicine.

The Law School offers professional and graduate courses leading to the degrees of Bachelor of Laws, Juris Doctor, Master of Laws, Master of Comparative Law, and Doctor of Juridical Science.

The School of Engineering offers courses leading to the degrees of Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering, and Master of Science in Engineering. It also directs work leading to the professional degrees in the fields of civil, electrical, and mechanical engineering.

The School of Pharmacy offers courses leading to the degrees of Bachelor of Science in Pharmacy and Master of Science in Pharmacy.

The School of Education offers undergraduate programs leading to the degrees of Bachelor of Arts in Education, Bachelor of Science in Home Economics, and Bachelor of Science in Physical Education; and graduate studies leading to the degrees of Master of Arts in Education and Doctor of Education.

The School of Government offers undergraduate programs of study in Foreign Affairs, Accounting, Business Administration, and Statistics leading to the degree of Bachelor of Arts in Government. Graduate work is offered leading to the following degrees: Master of Arts in Government in the fields of Foreign Affairs, Economic Policy, Accounting, Business and Economic Statistics, and Vocational Counseling; Master of Arts in Public Administration in the fields of General Administration and Governmental Fiscal Administration; Master of Arts in Personnel Administration; Master of Business Administration; and Doctor of Business Administration.

The College of General Studies supplements the adult education pro-

gram of the University through its Off-Campus Division, Campus Division, and Division of Community Services.

The Division of University Students makes available courses for mature students, not candidates for degrees in this University.

The Division of Special Students makes available courses for students in the process of qualifying for degree candidacy.

The Summer Sessions.

ACADEMIC STATUS

The George Washington University is on the final list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women. The University is a member of the College Entrance Examination Board.

The Law School is a charter member of the Association of American Law Schools and is approved by the Section of Legal Education and Admissions to the Bar of the American Bar Association. The School of Medicine is a member of the Association of American Medical Colleges and is one of the medical colleges which have been continuously approved by the American Medical Association. The School of Pharmacy is accredited by the American Council on Pharmaceutical Education and is a member of the American Association of Colleges of Pharmacy. The School of Engineering is on the accredited list of the Engineers' Council for Professional Development. The School of Education is a charter member of the American Association of Colleges for Teacher Education.

LOCATION

The George Washington University is in downtown Washington four blocks west of the White House and east of the Potomac River with its extensive parkway. Readily accessible to the University are many of the departments of the Government, including the Department of State, the Department of the Treasury, the Department of Justice, the Department of the Army, the Department of the Navy, the Department of the Interior, the Department of Agriculture, the Department of Commerce, and the Department of Labor, as well as the National Archives, the Capitol, the Library of Congress, the National Academy of Sciences, the Pan American Union, the National Gallery of Art, and the Corcoran Gallery of Art.

GOVERNMENT

The government and general educational management of The George Washington University are vested in a self-perpetuating Board of Trustees, with the President of the University as a member ex officio. The members of the Board are named for a period of three years and are divided into three classes. The members of one class are elected at each annual meeting to fill the places of the members whose terms of office expire. Two members of each class are nominated by the Alumni Association.

THE SCHOOL OF ENGINEERING

1953-54

THE SCHOOL OF ENGINEERING

THE FACULTY AND STAFF OF INSTRUCTION*

MARTIN ALEXANDER MASON, B.S. in Eng., Ing.-Dr., *Dean of the School of Engineering*

GEORGE ABRAHAM
Lecturer in Electrical Engineering

B.S. 1941, Brown University, M.S. 1942, Harvard University, Radio Engineer, R.C.A. 1941, Radio Engineer, 1942-45, Head, Science Education, 1945-47, Electronics Scientist 1947, Naval Research Laboratory, Lecturer, University of Maryland 1947-52, Lecturer in Electrical Engineering, The George Washington University 1952-54, UNESCO Panel on Education, R.C.A. Chairman, Intercollegiate Broadcasting System 1949-51, Member, AIEE, AIEE, AAAS, AAPT, ASEE, Soc. Res. Soc. Am., Sigma Xi.

NORMAN BRUCE AMES
Lecturer in Electrical Engineering

B.S. in E.E. 1945, Massachusetts State College, B.S. in E.E. 1947, Harvard University, 1947, B.S. in E.E. 1947, Massachusetts Institute of Technology, 1947, M.S. in E.E. 1947, Massachusetts Institute of Technology, 1947, Assistant Lecturer and Secretary, Murphy & Ames Inc., Chairman, Montgomery County Planning Committee 1947-52, Instructor to Professor 1949-52, Professor of Electrical Engineering 1952-54, The George Washington University, Professional Engineer, Maryland, Fellow, AIEE.

DAVID WILLIAM BAKER
Lecturer in Mechanical Engineering

B.S. in M.E. 1943, M.S. in M.E. 1944, University of Maryland, Mechanical Engineer, Naval Research Laboratory 1945-48, National Bureau of Standards 1948-52, Instructor, University of Maryland 1948-52, Lecturer in Mechanical Engineering, The George Washington University 1952-54.

WILLIAM WALTER BALWANZ
Lecturer in Electrical Engineering

B.E.E. 1941, The George Washington University, M.S. in E.E. 1946, University of Maryland, Electrical Engineer, U.S. Naval Air Test Center, Patuxent, Maryland, 1946-48, Electronics Scientist, Naval Research Laboratory 1946-48, Lecturer in Electrical Engineering, The George Washington University 1948-52, Professional Engineer, Virginia and District of Columbia, Member, AIEE, IRE, AIP, Sigma Tau.

CLARENCE EDWARD BARDSLEY
Lecturer in Mechanical Engineering

B.S. 1941, M.S. 1942, C.E. 1944, University of Missouri, Sc.D. 1946, University of Missouri, M.S. 1947, Northwestern University, John R. Freeman Scholar 1948, National Science Foundation 1948-49, Hydraulic Engineer, Corps of Engineers, University of Missouri, 1949-52, Professor of General Engineering, Oklahoma Agricultural and Mechanical College, 1952-54, Professor of Lecturer in Mechanical Engineering, The George Washington University 1954-56, Member, IAHR, ASME, ASCE, Tau Beta Pi, Sigma Tau.

LANDIUS EDMUND BENNETT
Lecturer in Electrical Engineering

B.S. in E.E. 1941, University of Nebraska, M.S. in E.E. 1943, E.E. 1946, University of Nebraska, Research Fellow, University of Illinois 1947-52, Superintendent of Hydroelectric Stations, Utah Power and Light Company 1943-48, Chief Operating Engineer, Mexican Power and Light Company 1948-52, City Manager, Fort Pierce, Florida 1950-52.

*The President of the University, The Dean of Faculties of the University, the Dean of the School, Professors, Associate Professors, and Assistant Professors constitute the Faculty.

12, Chief of Electrical Division, Federal Power Commission 1944. Assistant Professor University of Florida 1928-30; Associate Professor, University of North Carolina 1930-32; Lecturer in Electrical Engineering, The George Washington University 1931. Member, Washington Society of Engineers, Philosophical Society of Washington, Institute of AIEEE, Sigma Xi.

BERNARD BERNSTEIN

Lecturer in Mechanical Engineering

B.S. 1943, B.M.E. 1947, The George Washington University. Mechanical Engineer, Naval Research Laboratory 1947-51. Head, Design Review Section, Naval Research Laboratory 1951-57. Lecturer in Mechanical Engineering, The George Washington University 1947. Professional Engineer, District of Columbia. Member, Association of Professional Engineers, District of Columbia, Society of America, Sigma Tau.

RALPH ALONZO BRADY

Lecturer in Electrical Engineering

B.S. in E.E. 1916, Iowa State College. Test Engineer, General Electric Company. Designer, United Engineers and Constructors, Development Engineer, F. C. B. Company. Electrical Engineer, Potomac River Naval Command 1917-20. Associate Engineer, Lecturer 1927-48. Lecturer in Electrical Engineering 1928. The George Washington University. Professional Engineer, Maryland, Pennsylvania, District of Columbia. Member, Washington Society of Engineers.

THOMAS BENJAMIN BROWN

Professor of Physics

A.B. 1912, M.D. 1916, Cornell University. Assistant Professor to Professor 1917-22. Professor of Physics 1919. The George Washington University. Member, APS, AAPT. Philosophical Society of Washington, Sigma Xi.

ROY COLBERT

Professorial Lecturer on Engineering Administration

A.B. 1915, Arizona State College. Assistant Production Superintendent, Aircraft Division 1945-46; Director of Training 1948, Department of the Navy. Professional Lecturer The George Washington University 1948.

BENJAMIN CARPENTER CRUICKSHANKS

Professor of Mechanical Engineering

B.S. in M.E. 1920, The George Washington University. Editor, Hartford Steam Boiler Inspection and Insurance Company 1921-27. Instructor to Professor 1928-32. Professor of Mechanical Engineering 1942. The George Washington University. Research Associate, National Bureau of Standards 1928-30. Professional Engineer, District of Columbia. Member, ASME, Sigma Tau.

EDWARD FRENCH DAVIS

Associate in Mechanical Engineering

B.S. in Eng. 1945, The George Washington University; M.S. 1941, University of Maryland. Chemical Engineer, Naval Ordnance Laboratory. Research Associate 1942-44. Associate in Mechanical Engineering 1946. The George Washington University.

RAYMOND PUGH EYMAN

Associate Professor of Civil Engineering

C.E. 1914, Ohio State University. Deck Officer to Commander 1914-42. Chief Engineer of Coastal Survey 1943-45. U. S. Coast and Geodetic Survey. Associate Professor of Civil Engineering, The George Washington University 1947. Member, Sigma Xi.

RICHARD LEE FENTON

Lecturer in Mechanical Engineering

B.M.E. 1947, The George Washington University. Mechanical Engineer, Naval Research Laboratory 1947-50; Project Engineer, Bureau of Aeronautics, Department of the Navy 1950-. Instructor and Lecturer 1946-50, Lecturer in Mechanical Engineering 1950-. The George Washington University.

WILLIAM HYMAN FIDEN

Lecturer in Electrical Engineering

B.S. 1940, Kansas State College, M.S. 1941, Columbia University. Senior Physicist, Engineering Research Association, Inc., Division of Remington Rand 1941. Lecturer in Electrical Engineering, The George Washington University 1941. Member, American Physical Society, Sigma Xi.

RALPH EDWARD FUHRMAN
Lecturer in Civil Engineering

B.S. in C.E. 1910, University of Kansas. M.S. in Eng. 1917, Harvard University. Sanitary Engineer, Sewage Treatment Plant, Springfield, Missouri 1913-16. Assistant Superintendent and Superintendent, D. C. Sewage Treatment Plant 1917-19. Lecturer in Civil Engineering, The George Washington University 1941-42. Professional Engineer, Maryland. Member of Interstate Committee on Potomac River Basin. Member, ASCE, APHA, AWWA, Fed. Sew. and Ind. Wastes Assoc., AAAS.

JOHN CLIFFORD GOFF
Associate in Mechanical Engineering

B.M.E. 1946, The George Washington University. Mechanical Engineer, Naval Ordnance Laboratory 1948-49. Associate in Mechanical Engineering, The George Washington University 1946-47.

WILLIAM HERBERT GOSSARD
Lecturer in Electrical Engineering

A.B. 1941, High Point College. M.S. in E.E. 1950, North Carolina State College. U.S. Navy 1941-46. Electronic Scientist, Armed Forces Security Agency 1946-48. Instructor, Naval Academy Preparatory School 1946-47. Lecturer in Electrical Engineering, The George Washington University 1952-53. Member, IRE.

CHARLES EDWARD GREELEY
Associate Professor of Mechanical Engineering

B.S. in M.E. 1917, University of North Dakota. Design Engineer, Fairbanks, Morse and Company 1917-23. Mechanical Engineer, Bureau of Ships, U.S. Navy 1923-44. First Assistant Engineer aboard ships 1944-46. Assistant and Associate Professor of Mechanical Engineering, The George Washington University 1946-47. Member, ASME, SAE, ASLE.

BRUCE DOUGLAS GREENSHIELDS
Professor of Civil Engineering

B.S. in C.E. 1928, C.E. 1927, Oklahoma University. M.S. 1932, Ph.D. 1934, University of Michigan. Detroit Edison Fellow 1932-33. University of Michigan, City Engineer, Grandville, Ohio 1936-37. Research Engineer, Ohio State Highway Department 1937-40. Associate Professor, College of the City of New York 1940-42. Associate Professor, Polytechnic Institute of Brooklyn 1940-46. Associate Professor and Professor of Civil Engineering, The George Washington University 1946-47. Professional Engineer, New York, District of Columbia. Member, ASCE, Inst. Traf. Engrs., AAUP, ASCE, ARBA, Sigma Tau, Sigma Xi.

FOREST KLAIRE HARRIS
Professorial Lecturer in Electrical Engineering

A.B. 1923, Oklahoma University. M.S. 1923, Ph.D. 1931, Johns Hopkins University. First Assistant to President, National Bureau of Standards 1926-27. Professorial Lecturer in Electrical Engineering, The George Washington University 1931-32.

VINCENT HARRY HENNESSY
Associate in Civil Engineering

B.S. in E. 1948, The George Washington University. Designer, Corbett, Tinker and Company 1948-49. Civil Engineer, George Engineering Company 1949-52. Civil Engineer, George Engineering Corporation 1951-52. Associate in Civil Engineering, The George Washington University 1949-50. Member, ASCE, Sigma Tau.

FRANCIS LEWIS HERMACH
Lecturer in Electrical Engineering

B.E.E. 1941, The George Washington University. Electrical Engineer, National Bureau of Standards 1942-43. Lecturer in Electrical Engineering, The George Washington University 1942-43.

WILFRED HOWARD
Associate Professor of English Composition

A.B. 1922, University of California. A.M. 1926, Cornell University. Instructor, Oregon State Agricultural College 1922-24. Instructor, West Virginia University 1924-27. Associate Professor of English Composition, The George Washington University 1927-28. Member, Modern Language Association, Am. Soc. Aesth., Soc. Adv. Scand. Study.

HENRY PARK HUTCHINSON*Professorial Lecturer in Electrical Engineering*

E.E. 1930, Polytechnic Institute of Brooklyn, M.S. in E.E. 1933, Columbia University. Radio Engineer, Signal Corps Engineering Laboratory 1940-42. Radio Engineer, National Bureau of Standards 1946-51. Assistant Chief, Special Projects Branch, Office of Chief Signal Officer, U. S. Army 1951-. Professorial Lecturer in Electrical Engineering, The George Washington University 1948-. Member of International Radio Consultative Committee. Member, IRE, D. C. Soc. Prof. Engrs.

JOHN KAYE*Associate Professor of Mechanical Engineering*

B.S. in M.E. 1939, M.S. in M.E. 1940, California Institute of Technology. Aeronautical Engineer, War Production Board 1941-43. Mechanical Engineer, Pan American Airways 1943-45. Mechanical Engineer, Hydrodynamics Laboratory, California Institute of Technology 1945-50. Assistant Professor and Associate Professor of Mechanical Engineering, The George Washington University 1950-. Member, ASME, ASLE, Sigma Xi.

ARNOLD MAYO KRONSTADT*Associate in Mechanical Engineering*

B.M.E. 1945, The George Washington University. Chief Engineer, U. S. Naval Gun Factory 1947-52. Chief Engineer, Carl M. Freeman, Inc. 1952-. Associate in Mechanical Engineering, The George Washington University 1950-. Professor, Baltimore, Maryland, District of Columbia. Member, ASME, American Ordnance Association, American Standards Association, Society of Automotive Engineers.

JEROME ADDISON LEE*Lecturer in Electrical Engineering*

B.S. 1914, U. S. Naval Academy. Graduate 1914, Naval War College. Sixteen years sea duty. Instructor, U. S. Naval Academy 1920-22, 1941-47. Lecturer in Electrical Engineering, The George Washington University 1948-.

WOLFRAM KARL LEGNER*Associate Professor of German*

A.B. 1921, Harvard University. A.M. 1932, Ph.D. 1936, University of Pennsylvania. Instructor to Associate Professor of German, The George Washington University 1918-.

KERMIT MILTON LOVEWELL*Lecturer in Electrical Engineering*

B.S. in E.E. 1920, University of Wisconsin. Junior to Senior Engineer, Potomac Electric Power Company 1934-. Lecturer in Electrical Engineering, The George Washington University 1944-45, 1951-. Professional Engineer, District of Columbia. Member, AIEE.

MARTIN ALEXANDER MASON*Professor of Civil Engineering*

B.S. in Eng. 1911, The George Washington University. Ing.-Dr. 1939, University of Grenoble. John R. Freeman Scholar 1938. Junior Engineer to Engineer, National Bureau of Standards 1924-40. Chief Engineer, Beach Erosion Board, Corps of Engineers 1940-41. Lecturer in Mechanical Engineering 1941-44. Professor of Civil Engineering 1944-45. Professor of the School of Engineering 1945-. The George Washington University. Professional Engineer, District of Columbia. Member, ASME, ASCE, AWE, ASLE, Sigma Xi, Society of Engineers, Washington Academy of Sciences, Sigma Tau, Sigma Xi.

RUDOLPH MICHEL*Professorial Lecturer in Mechanical Engineering*

B.S. in M.E. 1916, University of Wisconsin. M.S. in M.E. 1928, University of Illinois. Mechanical Engineer, Westinghouse Electric Company 1929-32. Head Engineer Design Division, Bureau of Ships, Navy Department 1934-. Professional Lecturer in Mechanical Engineering, The George Washington University 1942-. Member, ASME, Am. Soc. Naval Engineers.

HAAREN ALBERT MIKLOFSKY*Associate Professor of Civil Engineering*

B.C.E. 1946, The George Washington University. M. Eng. 1947, Dr. Eng. 1950, Yale University. Assistant Professor and Associate Professor of Civil Engineering, The George Washington University 1949-. Member, ASCE, Connecticut Society of Civil Engineers. ASEE, Sigma Tau, Sigma Xi.

MALCOLM RICHARDSON MOORE

Lecturer in Electrical Engineering
B.E.E. 1946. The George Washington University. Electronics Engineer, Bureau of Ships, Department of the Navy. Lecturer in Electrical Engineering, The George Washington University 1947-.

CHARLES RUDOLPH NAESER

Professor of Chemistry
B.S. 1931, University of Wisconsin; M.S. 1933, Ph.D. 1935, University of Illinois. Chemical Warfare Service 1942-45. Technical Adviser, H.Q. European Command 1950. Instructor to Professor 1935-45. Professor of Chemistry 1947-. The George Washington University. Member, ACS, AAAS, AAUP, Sigma Xi.

HAROLD VALDEMAR OERTING

Lecturer in Electrical Engineering
B.S. in E.E. 1925, Georgia School of Technology. Supervisor of Lighting, Potomac Electric Power Company 1926-. Lecturer in Electrical Engineering, The George Washington University 1950-. Member, Illuminating Engineering Society.

THOMAS ALVIN O'HALLORAN

Lecturer in Electrical Engineering
B.S. in E.E. 1915, The George Washington University. General Engineer, Chesapeake and Potomac Telephone Company 1926-. Associate to Lecturer in Electrical Engineering, The George Washington University 1936-. Member, AIEE.

GEORGE PIDA

Lecturer in Electrical Engineering
B.E.E. 1947, The George Washington University. Head, Test Section 1945-49, Physicist 1949-. Naval Research Laboratory. Associate and Lecturer in Electrical Engineering, The George Washington University 1947-. Member AIEE.

MERLE IRVING PROTZMAN

Professor of Romance Languages
A.B. 1928, A.M. 1929, Dickinson College. Ph.D. 1940, Johns Hopkins University. Instructor to Professor 1929-41. Professor of Romance Languages 1941-. The George Washington University. Member, AAUP.

JAMES EDWARD ROBINS

Lecturer in Civil Engineering
B.C.E. 1926, The George Washington University. M. Eng. 1931, Yale University. Assistant to Professor Hardy Cross 1930-31. Structural Engineer, David Taylor Model Basin 1931-. Lecturer in Civil Engineering, The George Washington University 1952-.

ELI BAER ROTH

Lecturer in Mechanical Engineering
B.S. 1939, U.S. Naval Academy. M.S. 1949, U.S. Naval Postgraduate School. Commander, U.S. Navy 1945-. Associate Engineer, Argonne National Laboratory 1945-50. Navy Research Program, Atomic Energy Commission. Lecturer in Mechanical Engineering, The George Washington University 1952-.

WILLIAM JOHN RUBY

Lecturer in Civil Engineering
B.S. 1930, M.S. 1931, Michigan State College. Project Engineer, Reed Research, Inc. 1931-. Lecturer in Civil Engineering, The George Washington University 1952-.

ALVIN RAYMOND SCHWAB

Lecturer in Civil Engineering
B.S. 1918, Virginia Polytechnic Institute. M.S.E. 1920, Harvard University. Resident Engineer, Southern Railway System 1927-. Lecturer in Civil Engineering, The George Washington University 1947-. Professional Engineer, District of Columbia, Maryland, New Jersey, Virginia. Member, ASCE.

* On leave of absence 1953-54.

DWIGHT EDWARD SHYTLE*Lecturer in Electrical Engineering*

Executive Vice-President, General Manager, and Chief Engineer, Combustion Engineering Corporation, 1934-. Lieutenant, U. S. Navy 1943-46. Instructor to Lecturer in Electrical Engineering, The George Washington University 1943-. Member, ASH&VE.

BENJAMIN FRANKLIN SLINGLUFF*Lecturer in Electrical Engineering*

B.S. in E.E. 1937, Drexel Institute of Technology. Senior Engineer, System Planning Division, Potomac Electric Power Company. Lecturer in Electrical Engineering, The George Washington University 1949-. Professional Engineer, District of Columbia. Member, AIEE.

WALDO EDWARD SMITH*Professorial Lecturer in Civil Engineering*

B.E. in C.E. 1923, M.S. 1924, The State University of Iowa. Hydraulic Engineer, Muskingum Water Conservancy District 1935-39; Executive Secretary, American Geophysical Union 1944-. Associate Professor, Robert College 1928-31. Assistant Professor, Dakota State College 1931-35; Professorial Lecturer in Civil Engineering, The George Washington University 1946-. Member, AGU, ASCE, Tau Beta Pi, Sigma Xi.

JAMES HENRY TAYLOR*Professor of Mathematics*

B.S. 1916, University of Nebraska; A.M. 1920, Princeton University; Ph.D. 1924, University of Chicago. Instructor, University of Nebraska 1920-22; National Research Fellow, Princeton University, 1924-25; Professor, University of Wisconsin 1926-30; Professor of Mathematics, The George Washington University 1929-. Member, A. Math. Soc., M. Ass. A., AAUP, AAAS, Washington Academy of Sciences, Philosophical Society of Washington, Sigma Xi.

ELMER WALLACE TEAGARDEN*Lecturer in Civil Engineering*

B.S. in E.E. 1931, University of Colorado. Naval Architect, Philadelphia Naval Base 1940-46; Structural Designer, Bureau of Reclamation 1946-47; Civil Engineer, Bureau of Reclamation 1947-. Lecturer in Civil Engineering, The George Washington University 1950-. Professional Engineer, Colorado. Member, Col. Soc. Engrs.

ROBERT GAY TRUMBULL*Associate Professor of Mechanical Engineering*

B.S. 1913, Worcester Polytechnic Institute. Chief Estimator, Osgood Bradley Car Company 1919-27; Structural Designer, New England Electric System 1928-33; Chief Draftsman, Corps of Engineers 1936-41. Associate Professor of Mechanical Engineering, The George Washington University 1942-. Professional Engineer, District of Columbia. Member, ASME, ASCE.

CARL HUGO WALTHERProfessor of Civil Engineering*

B.E. 1931, M.C.E. 1933, Johns Hopkins University. Structural Designer, Bethlehem Steel Company 1939; Structural Consultant, Quartermaster General 1944-46; Alternate Member, National Inventors Council 1949-. Instructor to Professor 1919-47. Professor of Civil Engineering 1947-. Assistant Dean of The School of Engineering 1945-51. The George Washington University. Professional Engineer, Maryland, District of Columbia. Member, ASCE, ASEE.

FRANK MARK WEIDA*Professor of Statistics*

B.S. 1913, Kenyon College; Ph.D. 1923, State University of Iowa. Instructor, University of Iowa, 1917-24; Assistant Professor, Lehigh University 1925-30; Associate Professor to Professor 1930-35, Professor of Statistics 1935-. The George Washington University. Member, AA, Math. Soc., Math. Ass'n., Inst. Math. Stat., Stat. Ass'n., Philosophical Society of Washington, Washington Academy of Sciences.

* On leave of absence fall term 1953-54.

GRADUATE ASSISTANTS

PERCY HARRY ANDROS, B.S. 1938, University of Utah
HAROLD FICKEN STEGMAN, C.E. 1931, Rensselaer Polytechnic Institute
ALBERT RICHARD STIRNI, B.S. in C.E. 1934, Georgia Institute of Technology

STUDENT ASSISTANTS

JOSEPH EDISON BELL (Civil Engineering), ROBERT SAMUEL BURNS (Civil Engineering), JAMES MICHAEL COLANGELO (Civil Engineering), WALTER ADEN CORNNELL (Civil Engineering), ROBERT WILLIAM GREEN (Electrical Engineering), WILLIAM KLEIN (Electrical Engineering), RICHARD EDWARD NEARMAN (Mechanical Engineering), VIRGIL LEWIS PENCE (Mechanical Engineering), MICHAEL BRANDIES RAPPORT (Electrical Engineering), DARRELL ELMER RODGERS (Civil Engineering), SALVATORE SERVADIO (Electrical Engineering), WILLIAM AUBERT WEIDEMEYER (Civil Engineering).

ADMINISTRATIVE STAFF

ANNE BRILL CHASON, *Secretary to the Dean*
BEVERLY BRIGGS KELLY, *Clerk-Typist*
ROBERT HOWARD VAN SICKLER, *Clerk-Typist*

COMMITTEES *

THE DEAN'S COUNCIL ‡

1954

Norman Bruce Ames

Bruce Douglas Greenshields

1955

James Henry Taylor
Charles Rudolph Naeser

1956

Carl Hugo Walther
Charles Edward Greeley

COMMITTEE ON ADMISSIONS AND ADVANCED STANDING

Norman Bruce Ames, *Chairman*

Benjamin Carpenter Cruickshanks

Haaren Albert Miklofsky

COMMITTEE ON SCHOLARSHIP

The Dean of the School, *Chairman*

Thomas Benjamin Brown
Benjamin Carpenter Cruickshanks
Haaren Albert Miklofsky

James Henry Taylor
Carl Hugo Walther
John Kaye

* The President of the University and the Dean of the School of Engineering are members of all committees.
‡ Elected by the Faculty.

THE GRADUATE ADVISORY COMMITTEE

The Dean of the School, *Chairman*

Thomas Benjamin Brown
 James Henry Taylor
 Forest Klaire Harris
 Haaren Albert Miklofsky

Norman Bruce Ames
 Carl Hugo Walther
 Rudolph Michel
 John Kaye

GENERAL INFORMATION

INTRODUCTORY

The School of Engineering was organized October 1, 1884 as the Corcoran Scientific School of Columbian College and was situated in the University Building then at 15th and H Streets, NW. The school was named in honor of William W. Corcoran, Trustee and President of the Corporation from 1869 to 1888. Day and evening courses were offered in Literature, Science, and Technology and led to the degrees of Bachelor of Science, Civil Engineer, Mechanical Engineer, and Mining Engineer. The School was among the first to accept women for degree candidacy in engineering.

In 1902 the Corcoran Scientific School, the School of Graduate Studies, and the Columbian College were merged into a single Department of Arts and Sciences. Engineering degrees were made graduate in character and the student was required to hold a Bachelor of Science degree as a prerequisite to entrance. An indication of the developing character of the School is found in the entrance requirements which stated that "The candidate must give evidence he has completed a liberal undergraduate course—which was of such character as to fit him to pursue to advantage the study of advanced engineering subjects".

Administrative changes led to The Washington College of Engineering being initiated in 1905 as one of the several semi-independent undergraduate colleges of the University, each with its own Board of Trustees. The College provided instruction leading to undergraduate degrees in engineering and architecture.

In 1909 the name of the College was changed to the College of Engineering and Mechanic Arts, and the curricula were revised to give the student a thorough understanding of the theory underlying engineering practice. Emphasis was placed on the development of a knowledge of scientific principles upon which the student could build and by which he might solve new problems as they were met in practice.

The name of the school was changed again in 1914 to the College of Engineering and later to the School of Engineering. Architecture was dropped from the curriculum and degrees were limited to the field of engineering. However, the primary emphasis upon principles rather than

technology which had characterized the School since 1902 was continued and has remained to this day as one of the important distinguishing features of the School.

It has become traditional in the School of Engineering to maintain an intimate relationship between the students and the modern practices of engineering by including among the staff of instruction practicing engineers familiar with the latest problems and procedures of engineering science. The instructors participating in this plan bring to the student a direct contact with the practice of engineering and help to insure an effective balance of instruction between the principles of engineering and application of the principles to the many new problems confronting engineers today.

The courses of instruction are open to both men and women, continuing the practice first initiated in 1884.

HOURS OF INSTRUCTION

Courses of instruction are scheduled in the morning, afternoon, and evening. Evening classes are identical with daytime sections of corresponding courses, are taught by the same instructors, and carry the same amount of credit. By taking the evening and summer classes and extending the time of study beyond the customary four years, a student who is able to give only part of his time to college work may complete a regular course and obtain a degree.

VETERANS EDUCATION

The Office of Veterans Education of The George Washington University operates as a service bureau for veterans interested in studying at the University and acts in a liaison capacity between the University and the Veterans Administration. Here information may be obtained concerning the educational program of the University and the procedure for securing the educational benefits for veterans of World War II (Public Law 346) or "Korean" veterans (Public Law 550).

PUBLIC LAW 346

At least thirty days prior to registration the veteran desiring to attend under this GI Bill should apply to the Regional Office of Veterans Administration, 1825 H Street, NW., for a Certificate of Eligibility and Entitlement for presentation to the Office of Veterans Education at the time of registration. Veterans who have attended another institution under the GI Bill must obtain a Supplemental Certificate of Eligibility to present to this University.

PUBLIC LAW 550

At least thirty days prior to registration the veteran desiring to attend under this GI Bill should apply to the Regional Office of Veterans Administration, 1825 H Street, NW., for a Certificate of Education and Training, for presentation to the Office of Veterans Education at the time of registration. A photostatic copy of separation papers must accompany the original application for certification.

VOCATIONAL REHABILITATION

Disabled veterans desiring vocational rehabilitation under either GI Bill should apply to the Regional Office of Veterans Administration, 1825 H Street, NW., for approval of their training objectives at least sixty days prior to registration.

ADMISSION

Credit for work done in the service schools is granted provided the veteran has not been out of the service for three years or more. To be considered for such credit veterans should submit to the Director of Admissions photostatic copies of their records indicating courses successfully completed with sufficient identification of the course to enable the Admissions Office to locate it in the Guide to Evaluation of Educational Experience in the Armed Forces.

AIR FORCE RESERVE OFFICERS' TRAINING CORPS

On July 1, 1951, an Air Force Reserve Officers' Training Corps (Air Force ROTC) unit was established at the University under the authority of section 40-47C of the Act of June 3, 1916 (National Defense Act) as amended. Air Force personnel, approved by the President of the University, are detailed to the Department of the Air Force for supervision and instruction of the unit. Eligible male students enrolled full-time for work leading to a Bachelor's degree may elect to take the Air Force ROTC course. A total of twenty hours of elective credit, earned in this program, may be applied toward a degree—two hours a term for the basic course and three hours a term for the advanced course.

Membership in the Unit, which is voluntary, is open to any regularly enrolled full-time, male student who is a citizen of the United States, between the ages of 14 and 25, physically qualified, of good character, and a candidate for a Bachelor's degree. Students who successfully complete the basic course or have equivalent active military training may be selected to enter the advanced course. Students in the advanced course receive from the Government a subsistence allowance of approximately \$500 at the rate of \$81.00 a quarter, which is exempt from income tax. During the period of the summer camp, the advanced stu-

dent receives \$75 a month, food, lodging, and travel expense. Uniforms, textbooks, and training materials are provided for all Air Science courses.

A student enrolling in the basic course must agree to complete the two year course as a prerequisite for graduation from the University. A student, if selected for enrollment in the advanced course, must sign a contract to complete the course as a prerequisite to graduation; attend a six-week summer camp; if and when tendered, to accept a Reserve commission for an indefinite term; and to serve a period of two years on active duty, after receipt of his commission, when and if called by the Secretary of the Air Force.

MILITARY SERVICE DELAY

Deferment from induction under the Selective Service Act of 1951 may be granted to selected students within authorized quotas. Normally, students are not considered for draft deferment until the completion of one term's work in the University with a quality-point index above 2.00. This index must be maintained or the deferment is withdrawn. Students who are deferred and whose deferments are subsequently cancelled or become subject to cancellation because they failed to comply faithfully with all conditions under which deferments were originally granted are not again eligible for deferment under the provisions of this regulation without the approval of the Chief of Staff, USAF, in each individual case.

HEALTH ADMINISTRATION

The University maintains a health service that is primarily diagnostic in its intent. For medical emergencies and health consultations there is, on the Campus, a Student Health Clinic open from 9:00 A.M. to 5:00 P.M., with physician and nurse in attendance. There is also a rest room for women, with a graduate nurse in charge.

Medical privileges include: (1) the physical examination of every student entering from secondary school; (2) three visits by the University physician or surgeon, office or residence (District of Columbia), in any one illness, exclusive of a specialist, surgical operation, laboratory, or X-ray examination; (3) hospitalization, including board and nursing in the University Hospital for not more than one week during any twelve month period—the necessity to be determined by the Director of Health Administration. The duration of hospitalization period (maximum, one week) is also to be determined by the Director of Health Administration.

This medical benefit does not apply to illness or disability incurred previous to the University term or prior to payment of tuition fees.

The student is allowed if he so desires, to engage physicians and nurses of his own choice, but when he does so he will be responsible for the fees charged.

Rules: (1) The Director of Health Administration is empowered to limit or deny the medical benefits where, in his discretion, a student has, by his misconduct or breach of the rules of the University, made himself ineligible; (2) the Director of Health Administration has authority to determine the necessity and length of hospitalization; (3) a student who has severed his connection with the University is ineligible for medical benefits; (4) a student intending to train for an athletic team is required to pass a thorough examination at the beginning of each term; (5) the above regulations apply also during the summer term of the University.

The University is not responsible for injuries received in inter-collegiate or intra-mural games, or in any of the activities of the departments of physical education.

LIVING ACCOMMODATIONS

Women Students.—The Hattie M. Strong Residence Hall provides single rooms at \$35 a month and double rooms at \$30 a month a person. Meals are served at the Student Union. Applications for rooms should be made well in advance. Forms for application, together with detailed information, may be obtained from the Director of Activities for Women.

Girls under the age of twenty-one who are enrolled for twelve or more credit hours of academic work in the University and who are not living with their parents or relatives may live outside the dormitory only with the permission and approval of the Director of Activities for Women, upon receipt of written requests from parents. In no case will permission be granted for such girls to be domiciled outside the University except with persons approved by the Director of Activities for Women.

Men Students.—Welling Hall provides double room facilities for 102 students. Rooms rent for \$24 a month a person. Meals are served at the Student Union. Application forms for room reservation may be obtained from the Director of Activities for Men, Building R, 2027 H Street NW.

Information concerning private rooming and boarding facilities near the University, for women students twenty-one years of age or older and for men students, may be obtained at the Housing Office, 814 Twenty-second Street NW. The reservation of rooms in private houses must be made by students.

RELIGIOUS LIFE

The University recognizes the contribution that religion can make to the education of its students by encouraging them to participate in de-

nominal clubs of their own choice. National Catholic, Jewish, and Protestant bodies sponsor these religious organizations, which act as links between the University and the local churches. The Director of the University Chapel and the advisers to the various denominational organizations are available throughout the year for consultation on personal problems.

UNIVERSITY CHAPEL

The University Chapel is maintained as a non-sectarian expression of the faith of the University in the contribution that religion can make to the education of its students. Twenty-minute services are held Wednesday of each week at 12:10 P.M. Representative clergymen of Washington are guest speakers at these non-denominational services.

PLACEMENT OFFICE

The Placement Office, 2114 G Street NW., provides assistance to students and alumni seeking full- and part-time employment. This office maintains a registry of positions locally and nationally available, and refers qualified applicants for consideration. Information is also available on Civil Service examinations.

VOCATIONAL COUNSELING

The University Testing Center is at 2114 G Street NW. The Center offers educational and vocational counseling service. This office maintains a file of occupational information and training opportunities.

STUDENT UNION

The Student Union, 2125 G Street NW., is the center for student life. From the cafeteria and snack bar on the first floor to the game room on the fourth floor, it is well planned to meet the students' need for meals, study, recreation, and activities. In addition to the recreation lounge and social lounge the Student Union provides office space for the Student Council and for the other major student organizations.

The Student Activities Office, also in the Student Union, has available information concerning the student organizations and campus events.

DAVIS-HODGKINS HOUSE

The Davis-Hodgkins House, 731 Twenty-second Street, NW., is the engineering student center, providing lounges, reading rooms, and student organization offices. The House provides convenient, comfortable facilities for the exchange of ideas and good fellowship among student engineers.

INTERNATIONAL HOUSE

The International House, 2116 G Street NW., is the social center for students from foreign countries. A series of teas, dances and other forms of entertainment, and the use of club rooms and lounge enable students to become acquainted and feel at home in the University.

The International Students Society, now in its twenty-first year, welcomes as members students from other lands as well as North American students.

The Adviser to students from Foreign Countries, whose office is in International House, is available for advice and guidance.

STUDENT ACTIVITIES

DIRECTORS OF STUDENT ACTIVITIES

The University maintains the offices of the Director of Activities for Men and the Director of Activities for Women, for the guidance of students in all nonacademic phases of student life, such as, student activities, social life, and housing. The directors are available for individual counseling concerning personal adjustment to university life.

STUDENT GOVERNMENT

Student Council.—The Student Council is responsible to the Director of Activities for Men and the Director of Activities for Women for the conduct of all student activities. Members of the Council are elected annually.

Committee on Student Life.—The Committee on Student Life is the judicial branch of the student government. It is composed of not more than seven members of the faculty, appointed by the President of the University, and not more than six members of the student body, nominated by the Student Council and appointed by the President of the University. This Committee has the power to review the acts of all student organizations, including the Student Council, and set aside acts that are contrary to established policy and regulation of the University or the Committee.

Approval of Student Organizations.—This Committee is granted authority to approve or disapprove the establishment of any proposed organization on campus. No student club or society (except social fraternities, sororities, scholastic honor societies, religious or professional clubs or societies) organized as a branch or affiliate of a non-George Washington University organization will be recognized by the Committee on Student Life.

ELIGIBILITY FOR STUDENT ACTIVITIES

Any student registered in The George Washington University who has a general average of not less than C (2.00) is eligible to participate in non-athletic student activities, approved by the Committee on Student Life.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics.

The control and administration of all student activities are outlined in a separate bulletin.

STUDENT ORGANIZATIONS

HONOR SOCIETIES

Sigma Xi.—A national scientific honor society, the purpose of which is to encourage original investigation in science pure and applied. Outstanding graduate students in the sciences are eligible for full membership, and undergraduates who have shown marked ability in research may be elected to associate membership.

Omicron Delta Kappa.—A national fraternity emphasizing leadership in extracurricular activities.

Phi Eta Sigma.—A national fraternity, established to encourage and reward high scholarship and attainment, membership in which is limited to those freshman men who attain a scholastic average of at least 3.50.

Sigma Tau.—A national engineering fraternity, the purpose of which is to recognize scholarship and professional attainment.

PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers (Student Chapter).—Membership open to students who are candidates for a civil engineering degree or the degree of Bachelor of Science in Engineering.

American Institute of Electrical Engineers (Student Chapter).—Membership open to candidates for an electrical engineering degree.

American Society of Mechanical Engineers (Student Chapter).—Membership open to candidates for the degree of Bachelor of Mechanical Engineering.

Institute of Radio Engineers (Student Chapter).—Membership open to students in electrical engineering who are taking the communications option, or who are interested primarily in electronics.

Theta Tau (Gamma Beta Chapter).—A national professional (engineering) fraternity. Membership by invitation to outstanding students

who have completed successfully at least the freshman year in the School of Engineering.

SOCIAL FRATERNITIES

Sigma Chi, Kappa Sigma, Kappa Alpha, Theta Delta Chi, Phi Sigma Kappa, Sigma Alpha Epsilon, Sigma Phi Epsilon, Phi Alpha, Sigma Nu, Acacia, Tau Kappa Epsilon, Pi Kappa Alpha, Tau Epsilon Phi, Alpha Epsilon Pi, Delta Tau Delta, Phi Epsilon Pi.

SOCIAL SORORITIES

Pi Beta Phi, Chi Omega, Sigma Kappa, Alpha Delta Pi, Delta Zeta, Kappa Delta, Phi Sigma Sigma, Zeta Tau Alpha, Kappa Kappa Gamma, Delta Gamma, Kappa Alpha Theta.

RELIGIOUS ORGANIZATIONS

Baptist Student Union, B'nai B'rith Hillel Foundation, Canterbury Club, Christian Science Organization, Lutheran Student Association, Newman Club, Religious Council, Wesley Club, Westminster Foundation.

MUSICAL ORGANIZATIONS

Girls' Glee Club, Men's Glee Club.

STUDENT PUBLICATIONS

The Cherry Tree (the annual), *The University Hatchet* (weekly newspaper), *The George Washington Law Review*, *Mecheleciw* (engineers' publication).

OTHER ACTIVITIES

Alpha Phi Omega—National Service Fraternity, Alpha Theta Nu (scholarship winners), Big Sisters, Cheerleaders, Chess Club, Colonial Boosters, Hellenic Society, Inter-fraternity Council, Inter-fraternity Pledge Council, International Students' Society, Inter-sorority Athletic Board, Intramural Council, Junior Panhellenic Association, Martha Washington Club, Masonic Club, Sailing Association, Senior Panhellenic Association, Strong Hall Council, The George Washington University Players, Women's Recreation Association, World Government Seminar Group.

There is a complete program of intramural sports for both men and women.

THE ENGINEERS' COUNCIL

The Engineers' Council is the student governing body for the School of Engineering. It is composed of two representatives from each student organization in the School of Engineering, the Business Manager of the

engineer student magazine, and the House Manager of the Davis-Hodgkins House. The purpose of the Council is to provide liaison between the student body of the School of Engineering and the Faculty, Administration, and Student Government of the University in all matters affecting the general interests and welfare of the student body, the School of Engineering, or the University. The Council is maintained financially by the Engineers' Council Fee paid by each student in the School of Engineering, and sponsors the engineer student magazine, *Mecheleciv*; the Annual Engineers' Mixer, Engineers' Ball, Engineers' Banquet, and the Annual Christmas Tree Ceremony in the University Yard. Council meetings are open to all students in the School of Engineering.

The Council acts as the directing body for *Mecheleciv*, the engineers student magazine. The magazine is published six times a year and is sent free to all engineering students. It includes campus and alumni news, a calendar of events, news of the student organizations, and articles on engineering by students and faculty members. The magazine is published by a student Board of Editors and a volunteer student staff.

ADMISSION

The School of Engineering accepts men and women.

Students may enter The School of Engineering at the beginning of the fall term, the spring term, or the summer term.

GENERAL ADMISSION REQUIREMENTS

The following factors are considered in determining the eligibility of an applicant for admission:

1. The adequacy of previous academic work as preparation for the course of study now contemplated—including quantity and quality of work and the standing of the institution in which it was done.
2. The aptitude of the student for the course contemplated.
3. The character of the student.

The University reserves the right to refuse admission to any student who has a previous academic record of such grade as to create doubt of his ability to pursue college work successfully, or who for any other reason would not be a desirable student.

APPLICATION FOR ADMISSION

An applicant for admission must obtain from the Office of the Director of Admissions an application blank which he must fill out completely and return with the application fee of \$3. A recent photograph, with signature, of the applicant must be attached to the blank.

An applicant for admission to the Reserve Officers' Training Corps must also fill out and return a supplemental Air Force ROTC application form.

Applications should be filed not later than July 1 for the fall term, January 1 for the spring term, and May 1 for the summer term.

An applicant from a secondary school must send the high school record form provided by the University to his high school principal with the request that the principal fill out the form and mail it directly to the Office of the Director of Admissions.

An applicant who has previously attended an institution of higher learning must request the registrar of that institution to mail directly to the Office of the Director of Admissions a transcript of his record. If he has attended more than one such institution he must request the registrar of each institution to send to the Office of the Director of Admissions a transcript of his record, *even though credits were not earned*, together with an honorable dismissal from the institution last attended.

The Graduate Record Examination administered by the Educational Testing Service, Princeton, New Jersey, is accepted as supplemental evidence of the applicant's educational attainment, and the appropriate report should accompany the application for admission whenever available.

METHODS OF ADMISSION

FROM SECONDARY SCHOOLS

An applicant from a secondary school may seek to qualify for admission by certificate or examination.

BY CERTIFICATE

A certificate of graduation with a minimum of fifteen "units"* from an accredited secondary school and the recommendation from the principal of the secondary school that the applicant is prepared to undertake college work will be considered subject to the following conditions:

1. If the school is accredited by the regional accrediting association, the student must rank not lower than the fourth fifth of his class.
2. If the school is not listed by the regional accrediting association, but has been accredited by the state accrediting agency, the student must rank in the upper three fifths of his class.

By College Entrance Board Examinations

An applicant may qualify by passing satisfactorily College Entrance Board examinations as prescribed by the Director of Admissions. These

* A unit represents a year's study in a secondary school subject, including in the aggregate not less than 120 sixty-minute periods of prepared classroom work.

examinations are given at a large number of examination centers throughout the United States, including Washington, D. C., on August 12 and December 5, 1953; and January 9, March 13, May 15, and August 13, 1954.

Arrangements for the examinations should be made with the College Entrance Examination Board, Post Office Box 592, Princeton, New Jersey, not less than one month before the date of the examinations.

FROM HIGHER INSTITUTIONS *

An applicant for advanced standing may be considered for admission upon the presentation of satisfactory credentials from an accredited institution of higher learning. The student must be in good standing as to scholarship and conduct, and must be eligible to return to the previously attended institution in the term for which he seeks admission to this University.

If the transcript of record from such an institution includes the record of his secondary school work, it is not necessary for the applicant to have forwarded a separate record directly from the principal of the secondary school. High school work is considered only as fulfilling entrance requirements; it is never credited toward advanced standing.

Properly certified courses taken at accredited colleges or universities may be applied toward a degree at this University, subject to the curriculum requirements and regulations of the school or college to which admission is sought. Work of low pass grade (such as *D* or the equivalent) will not be considered for transfer.

ENTRANCE REQUIREMENTS

Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, Bachelor of Science in Engineering.

—An acceptable certificate of graduation from an accredited secondary school, or the satisfactory passing of College Entrance Board examinations in secondary school subjects selected with the approval of the Director of Admissions is required.

Nine and one-half of the fifteen units required for entrance must be distributed as follows: three in English, two in algebra, one in plane geometry, one-half in plane trigonometry, one in physics or chemistry, and two in one foreign language or history. A graduate of an approved high school who does not offer for admission the particular subjects required for the engineering curriculum, but who does present not less than fifteen acceptable units, may be admitted on condition, if such deficiency in the distribution of units does not exceed two units.

* The University reserves the right to refuse advance credit in whole or in part, or to allow it provisionally. Credit so given may be withdrawn for subsequent poor work.

Advanced standing may be granted for work successfully completed at accredited institutions of higher learning. Credit will be assigned by the School of Engineering to the extent that the work taken at previous institutions meets the requirements for the degree sought at this University, and subject to the general University regulations concerning satisfactory subsequent work.

Master of Science in Engineering.—Applications for admission to candidacy for the degree must be made to the Graduate Advisory Committee of the School of Engineering, through the Director of Admissions of the University.

Applicants are required to satisfy the Committee of their capacity for productive study in the discipline and must have acceptable personal qualities. Applicants holding Bachelor's degrees in engineering from recognized institutions and whose record, in the opinion of the Committee, gives evidence of adequate preparation for graduate study may be admitted to candidacy for the graduate degree. Applicants who do not hold a satisfactory degree, or whose adequacy of preparation is questioned may be admitted to candidacy upon successful completion of a qualifying examination prescribed by the Committee.

Study of a graduate character completed prior to admission to candidacy for the graduate degree will be considered by the Committee in prescribing the candidates program of study, provided it contributes substantially to the achievement of mastery of principles and methods. In any case a minimum of one year full-time study under the Graduate Advisory Committee is required.

The Professional Degrees.—Application may be made not sooner than three years after graduation from The George Washington University provided the candidate can demonstrate definite responsibility for engineering work of substantial importance. Application must be made to the Dean of the School of Engineering.

Unclassified Students

A person eligible for admission to regular standing but not a candidate for a degree may, at the discretion of the Dean, be admitted as an unclassified student.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified for entrance to the University.

A student who has previously matriculated in the University, but who has not been in attendance during the term prior to registration, should file an application for readmission in advance of registration.

Registration is for the term unless otherwise indicated on the registration paper. No registration is accepted for less than a term or one summer session.

A student may not register concurrently in The George Washington University and another institution without the permission of the Dean. Allowance of credit for work done concurrently will be at the discretion of the Committee on Admission and Advanced Standing.

Registration in the University entitles each student to the following University privileges (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described under Health Administration, page 23. These privileges, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

FEES AND FINANCIAL REGULATIONS

Application fee, charged each applicant for admission, non-refundable...	\$3.00
Tuition fee, for each credit hour* for which the student registers (except work toward the Master's degree in Engineering).....	15.00
For the degree of Master of Science in Engineering:	
For work leading to and including the Comprehensive Examination..	550.00
Graduation fee	20.00
Fee for binding Master's thesis.....	5.00
Fee for the Professional thesis.....	75.00
An annual fee, one-half payable in advance at the time of each registration.	
Late-registration fee, charged each student who fails to register within the designated period	5.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition.....	1.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student wishing to maintain "in residence" status during any term of absence from the University or after completion of tuition requirements.....	15.00
For special physical examination.....	2.00
Engineers' Council fee, charged each student in the School of Engineering for each term or any part thereof except the summer term.....	1.50
For each examination to qualify for advanced standing and for each special examination	5.00

* Payment of tuition for the thesis entitles the candidate, during the academic year of registration, to the advice and direction of the member of the faculty under whom the thesis is to be written. In case a thesis is unfinished, an additional successive academic year may be granted without further tuition payment. If the preparation of the thesis extends beyond the second academic year, it must be registered for again, and tuition paid on the same basis as for a repeated course.

Laboratory checkout fee, charged each student in chemistry courses who fails to check out of the laboratory by the time set by the instructor	2.00
Transcript fee, charged for each transcript of record after the first.....	1.00
Additional Course Fees	

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the term and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Treasurer, the student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 3.

Spring Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due, but who pays his fees on or before the fifteenth of the month in which payment is due, is charged a service fee of \$1. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

A student may not withdraw from either the basic course (2 years) or the advanced course (2 years) of the Air Force ROTC without the approval of the President of the University.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before November 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and is cancelled before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$2. A student who drops a course before the end of the term must check out of the laboratory at the next regular laboratory period.

Any student enrolled in the Air Force ROTC who fails to turn in uniforms, equipment, and textbooks on separation from the Corps will be charged the value of the missing items.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

SCHOLARSHIPS, PRIZES, FINANCIAL AID

SCHOLARSHIPS

Scholarships are awarded for two terms unless otherwise specified and are credited in equal parts for each term. Each holder must carry the full prescribed schedule during the period for which the scholarship is awarded. Except in the case of the School of Engineering Scholarships, the applicants must have established an academic record in courses at this institution, and should apply on prescribed forms which must be filed in the Office of the Chairman of the Committee on Student Loans and Scholarships not later than April 1 preceding the academic year for which the scholarship is to be awarded. Further information may be obtained from the Chairman of the Committee on Student Loans and Scholarships.

School of Engineering Scholarships.—Four scholarships, established in 1952, are available each year in the School of Engineering to graduates

of accredited secondary schools. Each scholarship provides full tuition for one year. The holders of these scholarships must carry a full program in the School of Engineering.

Emma K. Carr Scholarships.—Six scholarships in the amount of \$390 each and eight of \$100 each, established in 1932 by Mrs. Emma K. Carr, are available to "young men (of the white race) for undergraduate or postgraduate work, considering character, capacity, and need".

Henry Harding Carter Scholarship.—This scholarship, in the amount of \$400, established in 1896 by Mrs. Maria M. Carter in memory of her husband, Henry Harding Carter, is available to a deserving student who is preparing for the civil-engineering profession.

Maria M. Carter Scholarship.—This scholarship, in the amount of \$100, established in 1871 by Mrs. Maria M. Carter, is available to a young man.

Isaac Davis Scholarship.—This scholarship, in the amount of \$75, was established in 1869 by the Honorable Isaac Davis of Massachusetts. Nominations for the scholarship may be made "by the founder or his eldest lineal descendant". In case no such nomination is made, the scholarship is to be awarded by the University.

Hazelton Scholarship.—This scholarship, in the amount of \$300, established in 1950 by the bequest of Lillie S. Hazelton, is awarded annually "for the use and assistance of needy and worthy students".

Eugene and Agnes E. Meyer Scholarships.—A scholarship fund, in the amount of \$2,500, established in 1952 by the Eugene and Agnes E. Meyer Foundation, is available annually "to assist promising students or applicants in meeting the costs of furthering their education, with preferential consideration to children of persons who are employed in public service, including service in the armed forces or the judiciary."

David Spencer Scholarship.—This scholarship of \$150, established in 1918 by Miss Louisa J. Spencer, is available under certain restrictions.

The Zonta Club of Washington, D. C., Scholarship.—This scholarship, in the amount of \$200, offered by the Zonta Club of Washington, D. C., is available to a woman who is a senior or graduate student with special interest in a professional or business career.

THE COLUMBIAN WOMEN SCHOLARSHIP FUNDS

The Columbian Women Scholarships are awarded by the Scholarship Committee of the Columbian Women. Applications for these scholarships should be addressed to the Chairman of the Scholarship Committee, the Columbian Women, The George Washington University, Washington 6, D.C., not later than May 15 preceding the academic year for which the scholarship is to be awarded, or, in the case of award for the spring term, not later than January 1.

Nellie Maynard Knapp Scholarship Fund.—The income from this fund of \$5,000, established in 1915 in memory of a former president, Mrs. Martin A. Knapp, is available for scholarships for women.

Founders of Columbian Women Scholarship Fund.—The income from this fund of \$5,000, established in 1920, is available for scholarships.

Lillian Young Herron Scholarship Fund.—The income from this fund of \$5,000, established in 1925 and named in 1930 in memory of a former president, is available for scholarships.

College Women's Scholarship Fund.—The income from this fund of \$500, established in 1926 by the College Women's Club of Washington, D.C., is available for scholarship aid.

Grace Ross Chamberlin Scholarship Fund.—The income from this fund of \$2,300, established in 1932 in honor of a former president, is available for scholarship aid.

PRIZES

Alpha Chi Sigma Prizes.—Alpha Pi Chapter of Alpha Chi Sigma Fraternity offers annually the following prizes:

A "Handbook on Chemistry and Physics" is awarded to each of the three students who carry at least eighteen credit hours during the freshman year and attain the highest averages in freshman chemistry.

The name and year of graduation of the student who has attained the highest quality-point index in courses in chemistry will be inscribed on a bronze plaque. The winner must have had at least sixteen hours of chemistry including the final term at The George Washington University.

Alpha Delta Pi Prize.—Alpha Pi Chapter of Alpha Delta Pi Fraternity offers an annual prize of \$10 to the woman member of the junior class with the most outstanding record in scholarship, extra-curricular activities, and service to the University.

American Institute of Chemists Prize.—The District of Columbia Chapter of the American Institute of Chemists offers an annual prize of a medal and junior membership in the American Institute of Chemists to that graduating student, majoring in chemistry, who excels in scholarship and in the personal qualities of integrity and leadership.

Byrne Thurtell Burns Memorial Prize.—This prize of \$75 is awarded to the senior majoring in chemistry who shows the greatest proficiency in organic chemistry, as evidenced by a comprehensive examination, and who possesses such qualifications of mind, character, and personality as to give promise of future achievement.

Willie E. Fitch Prize.—The Willie E. Fitch Prize of \$75, established in 1883 by James E. Fitch, in memory of his son, is awarded annually to a senior student for the best examination in chemistry.

Mortar Board Prize.—This prize, consisting of a silver cup, is awarded

annually to the woman student in the sophomore class having a scholarship average of *B* or higher and the most outstanding record in activities.

Omicron Delta Kappa Prize.—Alpha Delta Circle of Omicron Delta Kappa Fraternity offers annually a plaque to be awarded to "that member of the senior class who throughout his course has done the most constructive work in the furtherance and upbuilding of the University student activities".

Phi Eta Sigma Prize.—The George Washington University Chapter of Phi Eta Sigma offers annually to the male student attaining the highest scholastic average in his first full term of work, a choice book selected from the field of the recipient's major interest. The winner's name will be engraved on a plaque in the Office of the Dean of the Junior College.

Phi Sigma Kappa Prize.—Phi Sigma Kappa Fraternity offers annually a silver cup to the winner of an oratorical contest, open to all freshmen.

Pi Beta Phi Prize.—A prize of \$20 is awarded annually by the District of Columbia Alpha Chapter of Pi Beta Phi Fraternity to that woman member of the senior class who throughout her college course has done the most constructive work in the promotion of student activities among the women of the University.

Ruggles Prize.—The Ruggles Prize of \$35, established by Professor William Ruggles in 1859, is awarded annually to a candidate for a baccalaureate degree for excellence in mathematics.

Sigma Kappa Prize.—Zeta Chapter of Sigma Kappa Sorority offers an annual prize of \$10 to the student with the highest grade in the final examination in General Chemistry.

Sigma Tau Prize.—Xi Chapter of Sigma Tau Fraternity offers annually a medal to be awarded to that member of the freshman class in the School of Engineering who maintains the highest scholastic standing in the work of the entire year.

James MacBride Sterrett, Jr., Prize.—This prize, established in 1911 by Professor James MacBride Sterrett in memory of his son, consists of books awarded annually to that student who obtains the highest average in Physics 6, 7, and 8.

Theta Tau Activities Plaque.—Gamma Beta Chapter of Theta Tau Fraternity offers annually a plaque to be awarded to that member of the senior class who has the most outstanding record in activities in the School of Engineering during the entire period of his attendance.

Alexander Wilbourne Weddell Prize.—This prize of \$350, established in 1923 by Mrs. Virginia Chase Weddell, is awarded annually to a candidate for a degree who writes the best essay on the subject of "the promotion of peace among the nations of the world". The prize essays shall become the property of the University and shall not be printed or

published without the written consent of the University. The University reserves the right to withhold the award if no essay attaining the required degree of excellence is submitted.

FINANCIAL AID

LOAN FUNDS

The following loan funds are available to students in the University in accordance with the qualifications placed thereon by the donors. Inquiries should be directed to the Office of the Treasurer.

University Loan Fund.—The Trustees of The George Washington University have established a loan fund of \$10,000.

Henry Strong Educational Foundation.—The Henry Strong Educational Foundation, established at Chicago under the will of General Henry Strong, makes available a fund for loans to both men and women students under the age of twenty-five years.

For information concerning full- and part-time employment, see "Placement Office", page 25.

REGULATIONS

A student enrolled in the School of Engineering is required to conform to the University regulations and to comply with the rules and regulations of the School of Engineering.

A student who withdraws or is suspended, or is otherwise absent from the University for one term or more, may re-enter and continue his work only under the rules and regulations in force at the time of his return.

If a student knowingly makes a false statement or conceals material information on an application for admission, registration card, or any other University document, his registration may be canceled and he will be ineligible (except by special action of the Faculty) for subsequent registration in any unit of the University.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

The student is expected to attend every meeting of the course in

which he is registered, fully prepared to carry on the work required. The student is held responsible for all work in the course, and all absences must be excused before provision will be made for him to make up the work missed. Excuses for absences from examinations which have been announced in advance can be obtained only by making written application to the instructor in charge of the course.

AMOUNT OF WORK

Eighteen credit hours, including required physical education, constitute normal full-time work. Nine credit hours constitute normal part-time work.

A full-time student who is not on probation may take ordinarily not more than nineteen credit hours. A student employed more than twenty-four hours a week, who is not on probation, may take ordinarily not more than ten credit hours. A student whose quality-point index is 3.00 or higher may be permitted by the Dean to exceed these limits by not more than two credit hours.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean, in order that adjustments in schedule may be made, if necessary, to bring his program within the Faculty's limitations upon the amount of work to be carried by an employed student.

ADVISORY SYSTEM

Every student entering the School of Engineering as a degree candidate is assigned a permanent Faculty adviser for purposes of guiding his educational career, providing assistance in his professional development as an engineer, and establishing close relationship between Faculty and student. The Dean acts as temporary adviser to entering or transfer students pending the assignment of permanent advisers.

The adviser represents the student in all cases requiring Faculty action. He may not deny a student entry into any course or activity to which the student is entitled under the regulations of the School of Engineering.

The student is required to obtain his adviser's approval of his program. The freshman and sophomore student is required to consult his adviser, when so directed by the Dean, and to follow his recommendations in all academic matters.

Students are encouraged to consult their advisers or instructors about college problems at any time; and parents or guardians are invited to consult the Dean and advisers concerning student problems.

SCHOLARSHIP REQUIREMENTS

A student who fails to maintain the scholarship requirements of the School of Engineering may be dismissed from the University.

GRADES

Grades are not given out by instructors but are mailed to the student through the office of the Registrar at the close of each term. Upon request, a copy of the student's grades will be forwarded to his parent or guardian.

The following grading system is used: excellent, *A*; good, *B*; average, *C*; passing, *D*; failing, *F*. Whenever a grade has not been assigned, the symbol *Inc.* (incomplete) or the symbol *W* (authorized withdrawal) will be recorded. The symbol *Inc.* is a sign temporarily to indicate that all the required work of the course has not been completed and a satisfactory explanation has been given to the instructor. An "incomplete" can not be made up after the lapse of one calendar year except by permission of the Faculty. Courses from which a student has withdrawn by proper authorization will be indicated by the symbol *W*. No student may repeat for grade a course in which he has received a grade of *D* or above, unless required to do so by the department concerned.

For graduate work, grades are indicated as "excellent", "satisfactory", "unsatisfactory", or "incomplete".

QUALITY-POINT INDEX

Quality points are computed from grades as follows: *A*, four points; *B*, three points; *C*, two points; *D*, one point; *F*, no points, for each credit hour for which the student has registered.

Scholarship is computed in terms of the quality-point index, obtained by dividing the number of quality points by the number of credit hours for which the student has registered, both based on the complete collegiate record. Courses marked *W* or *Inc.*, are not considered in determining the index, except that courses marked *Inc.* will be considered when a formal grade is recorded, or at the close of a calendar year, whichever occurs first. If an "incomplete" is not superseded by a proper grade within the allotted time, it is computed as zero quality points. Grades in courses taken at another institution are not considered in computing the quality-point index. Grades in courses taken to satisfy entrance requirements and in physical education courses are not considered in computing the quality-point index.

SCHOLARSHIP

In order to graduate, a student must have a general quality-point index of at least 2.00 and, in addition, a quality-point index of at least 2.00 in all work accepted for the degree in the School of Engineering.

Probation.—A student must maintain a quality-point index of at least 2.00, or be placed on probation. A student remains on probation as long as his quality-point index is below 2.00, or until his probation is removed by the Committee on Scholarship.

Probation is imposed for the amount of time required to complete a minimum of twelve additional credit hours or for one term, whichever is greater. In certain circumstances the period of probation may be extended. A student on probation may not hold office or participate in the activities of any student organization or represent the School in any undergraduate competition.

Suspension.—A student who has a quality-point index below 1.00 will be suspended. A student who becomes subject to probation for the third time, whether successive or after an interval, will be suspended.

A student suspended for poor scholarship may apply for readmission after an interval of one calendar year. He must then submit evidence to the Dean's Council that during his absence from the University he has so conducted himself as to indicate that he will profit by readmission. A student suspended twice for poor scholarship will not be readmitted.

The foregoing scholarship regulations are applied when a student has completed a minimum of twelve credit hours of work. Thereafter, the regulations are applied in multiples of twelve credit hours.

CHANGES IN PROGRAM OF STUDIES

A student may not change or drop courses or change his status to that of auditor except with the approval of the Dean of the School upon presentation of adequate reasons for such changes.

Change from one section to another of the same course or from one major subject to another within the School may be made with the approval of the Dean. All requirements specified in the course of study to which the change is made must be satisfied before graduation.

Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Applications for such change should be made on the proper form, obtainable in the Office of the Director of Admissions, where it should be filed.

Withdrawal from a course or from the University, *without academic or financial penalty*, requires the permission of the Dean. Permission to withdraw from the University will not be granted a student who has not a clear financial record.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

During the seven days following the first day of classes of a term, additional courses may be added to the student's program with the approval of the instructor, the student's adviser, and the Dean.

During the thirty-five days following the first day of class in the course, courses may be dropped from a student's program, with the approval of the student's adviser and the Dean, and without academic penalty. Withdrawal from a course without the approval of the student's adviser entails a penalty of failure in the course.

Withdrawal from a course, without academic penalty, may be authorized by the Dean at any time upon presentation of written evidence of extenuating circumstances.

Unauthorized withdrawal from a course at any time entails a penalty of failure in the course and financial responsibility for the full fee for the course.

CREDIT

Credit toward a degree is given only after regular registration for and satisfactory completion of the required work of classes in the University, or upon the granting of advanced standing in accordance with the regulations of the School.

TRANSCRIPTS OF RECORD

Official transcripts of student records will be forwarded on request to other institutions. Unofficial copies of records will be issued to the student on request. No charge is made for the first transcript; a fee of one dollar is charged for each one thereafter. No certificate of work done will be issued for a student who does not have a clear financial record.

PHYSICAL EDUCATION REQUIREMENTS

Freshmen and sophomores in the School of Engineering are required to take Physical Education 1-2* and 11-12* unless they are registered for less than 9 credit hours or unless regular employment during the day makes it necessary to take all classes during the evening hours. Veterans are not subject to these requirements.

Any other exemptions will be granted only upon written petition which has been recommended by the physical education department concerned and approved by the Dean of the School.

A student entering the University with advanced standing is not exempt from the physical education requirements unless he has satisfactorily met the requirements elsewhere.

* Freshmen in the School of Engineering enrolled in the Air Force ROTC substitute Air Science 1-2 for Physical Education 1-2; sophomores substitute Air Science 51-52 for Physical Education 11-12 and Speech 1.

The required medical and physical examinations, as specified by the departments of physical education, will be arranged at the time of registration.

USE OF CORRECT ENGLISH

Any student whose English in any course whatever is deemed unsatisfactory may be reported by the instructor to the Dean's Council. The Council may assign supplementary work, without academic credit, varying in amount with the needs of the student. If the work prescribed is equivalent to a course, the regular tuition fee is charged. The granting of a degree may be delayed for failure to make up any such deficiency in English to the satisfaction of the Dean's Council.

The foregoing regulation is to be interpreted as applying to both written and spoken English.

GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirement of the School, completed satisfactorily the scholarship, curriculum, residence, and other requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree should be filed in the Office of the Registrar at the time of registration for the last term of the senior or final year.

Curriculum.—Curriculum requirements for the Bachelor's degrees are stated on pages 46-52; for the Master's degree, on pages 52-53.

Residence.—For the Bachelor's degrees, a minimum of one year or thirty-six credit hours must be completed in residence. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in residence.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Thesis.—A thesis submitted in partial satisfaction of requirements for the Master's degree or a professional degree in engineering must be presented in its final form to the Dean not later than the date specified in the University calendar. Three copies of each thesis are required, one typewritten original and two legible and complete carbon copies. Detailed instructions for the styling of all theses should be obtained from the Dean.

Accepted theses, with accompanying drawings, become the property

of the University and are deposited in the University Library, where the duplicate copies are bound and made available for circulation. Permission to publish or adapt material in the thesis must be secured from the Dean.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation in absentia is approved by the Dean.

HONORS

With distinction.—The degree may be conferred "with distinction", at the discretion of the Faculty, if a student attains a quality-point index of 3.50 or higher on all work taken at this institution except that taken during the term immediately preceding the granting of the degree. To be eligible for this honor a student must have completed at this institution at least one-half of the work required for the degree.

Special honors.—Special honors may be awarded by the Faculty to any member of the graduating class for outstanding achievement in the student's major field of work on recommendation of the major department, under the following regulations:

1. The student must have his candidacy for special honors approved by the faculty members representing the major department or field not later than the beginning of the senior year.
2. The student must meet such other conditions as may be set at the time his candidacy is approved.
3. No student will be awarded special honors unless he has a quality-point index of at least 3.00 on all work taken at this institution except that taken during the term immediately preceding the granting of the degree.
4. To be eligible for honors a student must have completed at this institution at least one-half of the work required for the degree prior to the beginning of the term immediately preceding the granting of the degree.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The University Membership Card, issued upon the payment of fees, must be presented as identification.

Library books, with the exception of those in the Law and Medical collections, may be drawn for home use for a period of two weeks. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books and periodicals for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an

hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

HOURS

The University Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

PROPERTY RESPONSIBILITY

The University is not responsible for the loss of personal property in any University building.

THE BACHELOR'S DEGREES

The Bachelor's degrees are: Bachelor of Civil Engineering, Bachelor of Electrical Engineering, Bachelor of Mechanical Engineering, and Bachelor of Science in Engineering.

The degree of Bachelor of Science in Engineering may be earned with any of the following options: Business Administration, Chemistry, Economics, Mathematics, Physics, or Statistics.

Curricula leading to the degrees of Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, and Bachelor of Electrical Engineering are accredited by the Engineers' Council for Professional Development, the recognized accrediting body of the engineering profession.

CURRICULUM REQUIREMENTS

The satisfactory completion of one of the following curricula of 140 credit hours, exclusive of physical education, is required.

Physical Education is required of all students in the freshman and sophomore years. (See "Physical Education Requirements", page 43.)

Variations from the prescribed curricula may be made, with the per-

mission of the Dean's Council. A student desiring to omit a required course and substitute another must make written application to the Dean, presenting satisfactory reasons for the substitution and written approval must be obtained before registration for the course.

FRESHMAN YEAR (FOR ALL ENGINEERING CURRICULA)

	Credit Hours
Chem. 11-12	General Chemistry 8
CE 2	Plane Surveying 2
Engl. 1, 2	English Composition 6
Math. 12	Plane Analytic Geometry 3
Math. 19	Differential Calculus 3
ME 1	Engineering Survey and Orientation 1
ME 3	Mechanical Drawing 2
ME 4	Descriptive Geometry 2
Phys. Ed.	See page 43 for statement of requirement.
Phys. 6 and 7	General Physics 6

Total..... 33

ROTC.—Air Force ROTC students substitute Air Science 1-2 (4) for Mechanical Engineering 1 (1) and Physical Education 1-2 (2).

SOPHOMORE YEAR (FOR ALL ENGINEERING CURRICULA)

	Credit Hours
Phys. 8	General Physics 3
Phys. 55	Physical Measurements 3
Math. 20	Integral Calculus 3
Elective	(EE students take Math. 132) 3
EE 9-10	Elements of Electrical Engineering 6
CE 21	Analytical Mechanics: Statics 2
CE 22	Analytical Mechanics: Dynamics 3
Speech 1	Effective Speaking 3
Engl. 11	The Writing of Reports 3
ME 13-14	Mechanism 4
CE 25-26	Engineering Materials 4
Phys. Ed.	See page 43 for statement of requirement.

Total..... 37

ROTC.—Air Force ROTC students substitute Air Science 51-52 (4) for Physical Education 11-12 (2) and Speech 1 (3).

Bachelor of Civil Engineering

JUNIOR YEAR

	Credit Hours
CE 123	Strength of Materials 3
CE 136	Hydraulics 3
CE 140	Materials and Hydraulics Laboratory 2
ME 111-12	Thermodynamics 6
Phys. 132	Electronics 3
Econ. 1-2	Principles of Economics 6

* The student who begins Physics with Physics 6 or 7, is subject to a qualifying examination. Credit will be given for Physics 5 if not used for entrance requirements.

CE 141	Graphic Statics	3
CE 142	Bridge Stresses	3
Elective	.....	6
Total.....		35

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (6).

SENIOR YEAR		Credit Hours
CE 23	Higher Surveying	4
CE 164	Highway Engineering	3
CE 147-48	Structural Design	4
CE 149-50	Concrete and Masonry Construction	6
CE 151-52	Statically Indeterminate Structures	4
CE 181-82	Water Supply and Sewerage	4
CE 187-88	Engineering Contracts and Specifications	2
CE 189-90	Civil Engineering Proseminar	1
CE 192	Soil Mechanics	3
Total.....		36

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Civil Engineering 187-88 (4) and Civil Engineering 189-90 (2).

Bachelor of Electrical Engineering

JUNIOR YEAR		Credit Hours
CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Econ. 1-2	Principles of Economics	6
EE 105-6	Direct-Current Laboratory	4
EE 107	Alternating-Current Circuits	3
EE 108	Alternating-Current Machinery	3
Elective	.....	3
Total.....		36

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Economics 2 (3) and Elective (3).

SENIOR YEAR		Credit Hours
1. Communications Option		6
EE 115-16	Advanced Network Theory	4
EE 123-24	Advanced Network Laboratory	3
Phys. 133	Electronic Circuits	3
EE 148	Applications of Electronic Devices	4
EE 111-12	Electrical Measurements	4
EE 109	Alternating-Current Machinery	3
EE 150	Electronic Devices Laboratory	2

The School of Engineering

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EE 133-34	Alternating-Current Laboratory	4
EE 189-90	Electrical Engineering Proseminar	2
Elective	.....	4
Total.....		35

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Electrical Engineering 189-90 (2) and Elective (4).

2. Power Option		
EE 109	Alternating-Current Machinery	3
EE 140	Electrical Design	3
EE 139	Illumination Engineering	2
EE 138	Industrial Electrical Power Applications	2
EE 129	Symmetrical Components	3
EE 130	Principles of Electric Power Transmission	3
EE 111-12	Electrical Measurements	4
EE 133-34	Alternating-Current Laboratory	4
EE 189-90	Electrical Engineering Proseminar	2
Phys. 133	Electronic Circuits	3
Elective	.....	6
Total.....		35

ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Elective (6).

Bachelor of Mechanical Engineering

JUNIOR YEAR

JUNIOR YEAR		Credit Hours
CE 123	Strength of Materials	3
CE 136	Hydraulics	3
CE 140	Materials and Hydraulics Laboratory	2
ME 111-12	Thermodynamics	6
Phys. 132	Electronics	3
Econ 1-2	Principles of Economics	6
ME 141-42	Management Problems	4
ME 7	Machine Drawing	2
ME 8	Mechanism Drawing	2
Elective	.....	6
Total.....		37

ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (6).

SENIOR YEAR

		SENIOR YEAR	Credit Hours
ME 129-30		Power Plants	6
ME 127-28		Machine Design	4
ME 139		Fluid Dynamics	3
ME 140		Dynamics of Machinery	3
ME 131-32		Heating, Ventilating, Air Conditioning, and Refrigeration	4
ME 126		Methods of Manufacture	2
ME 133		Combustion Engines	2

ME 115-16
ME 189-90
Elective

Mechanical Laboratory	2
Mechanical Engineering Proseminar	4
.....	34

Total.....
ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for Mechanical Engineering 189-90 (2) and Elective (4).

Bachelor of Science in Engineering

JUNIOR YEAR

CE 123
CE 136
CE 140
ME 111-12
Phys. 132
Econ. 1-2
ME 141-42
CE 187-88
Elective

Strength of Materials	3
Hydraulics	3
Materials and Hydraulics Laboratory.....	2
Thermodynamics	6
Electronics	3
Principles of Economics.....	6
Management Problems	4
Engineering Contracts and Specifications	4
.....	6

Total.....
ROTC.—Air Force ROTC students substitute Air Science 101-2 (6) for Elective (6).

SENIOR YEAR

Option

As approved by the department concerned.....

Total.....
ROTC.—Air Force ROTC students substitute Air Science 151-52 (6) for option courses (6) as approved by the department concerned.

The Bachelor of Science in Engineering curriculum provides training in the basic physical principles employed in engineering and in engineering methods of analysis, and in addition, offers an opportunity for study in optional fields in which the student has special interest.

Optional study can be selected from the fields of Business Administration, Chemistry, Economics, Mathematics, Physics, or Statistics. The program of study in the option is formulated by the department concerned in conference with the student. The program, bearing the approval of the department concerned, must be submitted by the student to the Dean's Council for approval at the beginning of the junior year. During the period of optional study the student must comply with such regulations as the department concerned may prescribe.

The following curricula are recommended, for the guidance of students, by the several departments in which optional study is available. Variations from these curricula to satisfy the exceptional needs of individual students may be made by the department concerned.

BACHELOR OF SCIENCE IN ENGINEERING OPTIONAL CURRICULA

	Credit Hours
Business Administration Option	
Acct. 1-2	6
Bus. Adm. 101	3
Bus. Adm. 131	3
Pol. Sc. 127	3
Elective	
Introductory Accounting	6
Business Organization and Combination	3
Business Finance	3
Commercial Law: Contracts, Agency, and Bailments	3
Fifteen credit hours to be selected from the following:	
Acct. 101: Cost Accounting	
Acct. 111: Financial Statement Analysis	
Acct. 155: Business Budgeting	
Bus. Adm. 105: Personnel Management in Industry	
Bus. Adm. 106: Problems in Personnel Management	
Bus. Adm. 109: Office Management	
Bus. Adm. 121: General Insurance	
Bus. Adm. 141: Principles of Marketing	
Bus. Adm. 145: Sales Management	
Bus. Adm. 150: Principles of Purchasing	
Econ. 121: Money and Banking	
Econ. 175: Railroad Transportation	
Econ. 176: Motor, Air, and Water Transportation	
Stat. 111: Business and Economic Statistics	
Chemistry Option	
Chem. 21	4
Chem. 22	4
Chem. 111-12	6
Chem. 113-14	4
Chem. 122	4
Chem. 135	4
or 155	
Chem. 151-52	2
Elective	8
Qualitative Inorganic Analysis	4
Quantitative Inorganic Analysis I	4
Physical Chemistry Lectures	6
Physical Chemistry Laboratory	4
Quantitative Inorganic Analysis II	4
Inorganic Chemistry: Preparations	
Organic Chemistry: Preparations	2
Organic Chemistry	8
Two years of German recommended	12
Economics Option	
Econ. 121	3
Econ. 122	3
Econ. 141-42	6
Stat. 111	3
Stat. 112	3
Elective	
Money and Banking	3
The Supply and Control of Money	3
Labor Economics	6
Business and Economic Statistics I	3
Business and Economic Statistics II	3
Nine credit hours in Statistics or Business Administration selected with the approval of the Department of Economics.	
Mathematics Option	
Fifteen credit hours of mathematics beyond calculus, in second- and third-group courses.	
Physics Option	
Math. 132	3
Phys. 106	3
Phys. 113-14	6
Phys. 132	3
Phys. 155	3
Differential Equations	3
Optics	3
Atomic and Statistical Physics	6
Electronics	3
Advanced Physical Measurements	3

Statistics Option

Stat. 91-92

Stat. 117

Stat. 118

Stat. 155-56

Stat. 157-58

Principles of Statistical Methods	6
Analysis of Variance	3
Correlation and the Chi-Square Test	3
Mathematical Probability	6
Mathematical Statistics	6

THE DEGREE OF MASTER OF SCIENCE IN ENGINEERING

Upon the satisfactory completion of the graduate requirements of the School of Engineering the degree of Master of Science in Engineering is conferred. The discipline of this degree is designed to lead to a mastery of scientific principles and methods as they are applied in engineering. It is conceived that this objective can be served best by providing a relationship in which the intellectual needs and desires of the student are an important element in determining the curriculum. To this end the responsibility for the student's program of study is established in a Graduate Advisory Committee composed of members of the University Faculty and specialists selected from the engineering profession. Programs of study are prescribed for each candidate by the Graduate Advisory Committee, or an assigned adviser, in accordance with his state of knowledge and needs, and as required to achieve the objective of mastery of principles and methods.

ADMISSION TO CANDIDACY

Applications for admission to candidacy for the degree must be made to the Graduate Advisory Committee.

Applicants are required to satisfy the Committee of their capacity for productive study in the discipline and must have acceptable personal qualities. Applicants holding Bachelor's degrees in engineering from a recognized institution, and whose record, in the opinion of the Graduate Advisory Committee, gives evidence of adequate preparation for graduate study may be admitted to candidacy for the graduate degree. Applicants who do not hold a satisfactory Bachelor's degree in engineering, or whose adequacy of preparation is questioned may be admitted to candidacy upon successful completion of a qualifying examination prescribed by the Committee.

ADVANCED STANDING

Study of a graduate character completed prior to admission to candidacy for the graduate degree in the School of Engineering will be considered by the Graduate Advisory Committee in prescribing the candidate's program of study provided it contributes substantially to the achievement

mastery of principles and methods. In any case a minimum of one year full-time study must be completed under the Graduate Advisory Committee.

REQUIREMENTS FOR THE DEGREE

A minimum of one year full-time study as approved by the Graduate Advisory Committee must be completed successfully. Candidates with limited areas of unsatisfactory preparation may be required to complete any necessary remedial or preparatory study in addition.

Study applied to satisfy requirements for another degree may not be applied to satisfy requirements for the graduate degree in engineering.

Candidates for the degree must demonstrate substantial mastery of scientific principles and methods of their use in the candidate's area of interest by successful completion of the prescribed program of study and a comprehensive examination.

The candidate's scholarship must be satisfactory to the Graduate Advisory Committee and will commonly be required to be equivalent to grade B. A student whose scholarship is considered to be unsatisfactory will be suspended by the Dean upon the recommendation of the Committee, or his assigned adviser.

With the approval of the Graduate Advisory Committee the candidate may be permitted to include a thesis in his program of study. The candidate will be subject to an oral examination of his thesis.

In addition to the course examinations, the candidate must complete successfully a comprehensive examination on his area of study. The examination may be written or oral, or both, at the discretion of the Graduate Advisory Committee.

The candidate must complete successfully the program of study prescribed within three years if a full-time student, and within five years if a part-time student.

THE PROFESSIONAL DEGREES

The professional degree of Civil Engineer, Electrical Engineer, or Mechanical Engineer may be conferred upon a graduate of the School of Engineering who has demonstrated his professional ability.

REQUIREMENTS FOR THE DEGREE

1. Application may not be made sooner than three years after graduation, and then only if the candidate has had definite responsibility for engineering work of substantial importance.

2. A detailed statement of the candidate's experience, references, the degree sought, and the title of the dissertation must be filed with the

Dean eight months before the Commencement at which the degree is to be conferred.

Detailed information concerning the preparation of the dissertation may be obtained from the Office of the Dean.

3. The dissertation will be read for acceptance by an examining committee appointed by the Dean to include members of the Faculty of the School of Engineering and at least one expert from engineering practice. The committee will report its recommendation to the Faculty of the School of Engineering.

COURSES OF INSTRUCTION

COURSES OF INSTRUCTION

On the following pages, under the alphabetically arranged names of the departments of instruction, are listed the courses of instruction offered in the School of Engineering. Also listed are courses offered by other schools and colleges of the University, but required or accepted as electives for the degrees in engineering. The courses as here listed are subject to some slight change. Students are referred to the schedule of classes, which is available prior to the opening of each term, for the hourly scheduling of all courses of instruction. The University reserves the right to withdraw any course announced.

INDICATION OF THE AMOUNT OF CREDIT

The number of credit hours given for the satisfactory completion of a course is indicated in parentheses after the name of the course. A credit hour usually consists of the completion of one fifty-minute period of class work or of one laboratory period a week for one term. A dagger (†) preceding the number of a year course indicates that the course may not be entered in the second term and that credit will not be given until the work of both terms has been completed.

CIVIL ENGINEERING

- 2 *Plane Surveying* (2)
Principles, methods, and instruments used in surveying; with field work. Prerequisite: Trigonometry. Lecture and laboratory. Surveying fee, \$12.
- 15 *Navigation* (3)
Principles, methods, and instruments used in surface and aerial navigation. Charts, piloting, dead-reckoning, nautical astronomy, position determination. Prerequisite: Trigonometry.
- 21 *Analytical Mechanics: Statics* (2)
Composition and resolution of forces; axial stresses, centroids; friction. Prerequisite: Physics 6; prerequisite or concurrent registration: Mathematics 20.
- 22 *Analytical Mechanics: Dynamics* (3)
Kinematics of a particle; kinetics of a body in translation, rotation, and plane motion; work and energy; impulse and momentum; simple vibrations. Prerequisite: Civil Engineering 21.
- 23 *Higher Surveying* (4)
Elements of geodesy, triangulation, topography, hydrography, and precise and trigonometric leveling, with field work. Prerequisite: Civil Engineering 2. Lecture and laboratory. Surveying fee, \$12.

- 24 Elementary Photogrammetry (3)**
History and development of photogrammetry; fundamental principles, methods, and instruments used in photographic surveying and production of maps; photographic interpretation; principles of stereoscopy. Laboratory work with photographs and instruments in determination of scale, tilt, relief, and map plotting. Prerequisite: Civil Engineering 23; Physics 6. Laboratory fee, \$3.
- 25-26 Engineering Materials (2-2)**
Emphasis on properties and uses of nonmetallic materials such as cements, fuels, and plastics; and metallic materials including steel, copper, aluminum, and alloys. Prerequisite or concurrent registration: Chemistry 12.
- 123 Strength of Materials (3)**
Tension, compression, shear, flexure, and torsion; deflection; combined and working stresses. Prerequisite: Civil Engineering 22.
- 136 Hydraulics (3)**
Hydrostatics; flow through pipes and open channels; laminar and turbulent flow. Prerequisite: Civil Engineering 22.
- 140 Materials and Hydraulics Laboratory (2)**
Determination of the properties of materials by mechanical tests, and a study of the flow of fluids. Prerequisite: Civil Engineering 123; prerequisite or concurrent registration: Civil Engineering 26 and 136. Laboratory fee, \$9.
- 141 Graphic Statics (3)**
Fundamental principles; analyses of beams; determination of stresses in roof trusses and framed bents. Prerequisite or concurrent registration: Civil Engineering 123. Lecture and drafting room. Drafting room fee, \$2.
- 142 Bridge Stresses (3)**
Determination of stresses in modern types of bridge trusses. Prerequisite: Civil Engineering 141. Lecture and drafting-room. Drafting-room fee, \$2.
- 147-48 Structural Design (2-2)**
Computations and drawings for the design of steel structures. Prerequisite: Civil Engineering 142. Lecture and drafting-room. Drafting-room fee, \$5 a term.
- 149-50 Concrete and Masonry Construction (3-3)**
Plain concrete, general properties and theory of reinforced concrete, foundations, and retaining walls. Prerequisite: Civil Engineering 25 and 123. Lecture, laboratory, and drafting room. Civil Engineering 149 laboratory fee, \$9; Civil Engineering 150 drafting-room fee, \$2.
- 151-52 Statically Indeterminate Structures (2-2)**
A study of such structures as continuous spans, rigid frames, and arches by methods of work, slope deflection, and moment distribution. Prerequisite: Civil Engineering 142.

- 164 *Highway Engineering* (3)
Highway economics, location, construction, and maintenance. Prerequisite: Civil Engineering 25.
- 181-82 *Water Supply and Sewerage* (3-3)
Collection, storage, purification, and distribution of water; sewerage systems and treatment of sewage. Prerequisite: Civil Engineering 136; Chemistry 12.
- 187-88 *Engineering Contracts and Specifications* (2-2)
Contract essentials, types, and legal principles; analysis and preparation of specifications. Prerequisite or concurrent registration: Civil Engineering 25-26.
- 189-90 *Civil Engineering Proseminar* (1-1)
- 192 *Soil Mechanics* (3)
The basic concepts of the behavior of soil as an engineering material. Prerequisite: Civil Engineering 25, 123, and 136.
- 201 *Advanced Mechanics of Materials* (3)
Advanced topics in the mechanics of materials. Stresses at a point, thick cylinders, general bending, torsion, localized stress, and stress concentration.
- 202 *Applied Elasticity* (3)
The theory of elasticity as applied in three-dimensional analysis of stress, strain, and bending.
- 203 *Foundation Problems* (3)
The integration of structural theory and soil mechanics, as applied to foundation, retaining wall, slope stability, and drainage problems. The interrelationship of structural action and soil stability is emphasized.
- 204 *Theory of Structures* (3)
Advanced analysis and design of indeterminate structures, such as, continuous and suspension bridges, high building frames, arches, rigid frames, and columns.
- 205 *Prestressed Concrete Theory* (3)
A study of the theory and applications of prestressed concrete, including the design of prestressed concrete structures.
- 299-300 *Thesis* (3-3)

ELECTRICAL ENGINEERING

- 9-10 *Elements of Electrical Engineering* (3-3)
Electrical Engineering 9: magnetic and electric circuits; direct-current instruments and machines. Electrical Engineering 10: alternating-current circuits, instruments, and machines. Prerequisite: Physics 7. Prerequisite or concurrent registration: Mathematics 20.

- 105-6 *Direct-Current Laboratory (2-2)*
For the student majoring in electrical engineering. A course in measurements and direct-current dynamo laboratory. Prerequisite: Electrical Engineering 9-10. Laboratory fee, \$9 a term.
- 107 *Alternating-Current Circuits (3)*
Alternating-current-circuit theory. Extensive consideration is given to harmonic analysis and to the study of harmonics in both single-phase and polyphase circuits. Prerequisite: Electrical Engineering 10.
- 108 *Alternating-Current Machinery (3)*
Transformers and polyphase induction motors. Prerequisite: Electrical Engineering 107.
- 109 *Alternating-Current Machinery (3)*
Synchronous generators and motors, single-phase motors, converters, mercury arc rectifiers. Prerequisite: Electrical Engineering 108.
- 111-12 *Electrical Measurements (2-2)*
Theory of direct-current and alternating-current instruments, bridges, and meters. Prerequisite or concurrent registration: Electrical Engineering 107.
- 115 *Advanced Network Theory I (3)*
Theory of resonance, linear networks, transmission lines, and filters. Prerequisite: Electrical Engineering 107.
- 116 *Advanced Network Theory II (3)*
Theory of transmission at UHF and VHF frequencies including Maxwell's equations, wave guides, and methods of power generation at these frequencies. Prerequisite: Electrical Engineering 115 and Physics 132. Prerequisite or concurrent registration: Physics 133.
- 123 *Advanced Network Laboratory I (2)*
A laboratory course associated with Electrical Engineering 115. Laboratory fee, \$9.
- 124 *Advanced Network Laboratory II (2)*
A laboratory course associated with Electrical Engineering 116. Prerequisite: Electrical Engineering 123. Laboratory fee, \$9.
- 129 *Symmetrical Components (3)*
Theory and application of symmetrical components in unbalanced circuits, alternating-current machinery, and transmission lines. Prerequisite: Electrical Engineering 108.
- 130 *Principles of Electric Power Transmission (3)*
Mechanical and electrical characteristics of transmission lines, approximate and rigorous solutions by means of hyperbolic functions, steady-state and elementary transient considerations, the more important phases of distribution of electrical energy. Prerequisite: Electrical Engineering 129.
- 133-34 *Alternating-Current Laboratory (2-2)*
A continuation of Electrical Engineering 105-6, with experiments on

alternating-current circuits, instruments, and machinery. Prerequisite: Electrical Engineering 106 and 108. Laboratory fee, \$9 a term.

138 Industrial Electrical Power Applications (2)

The characteristics of the various types of electrical motors and other power appliances, and the principles governing their applications in industry. Prerequisite: Electrical Engineering 10.

139 Illumination Engineering (2)

Principles and practices in present-day illumination engineering. Prerequisite: Electrical Engineering 10.

140 Electrical Design (3)

Principles of design, with reference to materials of construction and electrical equipment. Practical exercises are assigned in connection with classroom work. Prerequisite: Electrical Engineering 109. Lecture and laboratory.

148 Applications of Electronic Devices (3)

Practical applications of electronic devices such as power supplies, voltage regulators, multivibrators, electronic counters, and servo-mechanism. Prerequisite: Physics 133.

150 Electronic Devices Laboratory (2)

A laboratory course associated with Electrical Engineering 148. Laboratory fee, \$9.

189-90 Proseminar in Electrical Engineering (1-1)

Prerequisite: Electrical Engineering 108.

201 Radio Wave Propagation (3)

Theory of the radiation and propagation of electromagnetic waves in space, with consideration of practical application to radio problems.

202 Microwave Electronics (3)

Behavior of vacuum tubes at ultra-high frequencies. Theory and applications of microwave oscillators and transmission circuits. Measurement problems.

203 Electric Circuit Analysis (3)

Analysis of circuits under stationary and transient conditions by operational methods. Generality of the circuit concept.

204 Advanced Electrical Design (3)

Advanced consideration of transformers, polyphase machines, and direct-current machinery with particular attention to design difficulties.

206 Electronic Circuit Problems (3)

Design of low power electronic circuits, oscillators, receivers, vacuum tube counters and timers, amplifiers.

300 Thesis (3-3)

MECHANICAL ENGINEERING

- 1 *Engineering Survey and Orientation* (1)
Open to freshmen only.
- 3 *Mechanical Drawing* (2)
Drafting-room fee, \$5. Drafting (6 hours).
- 4 *Descriptive Geometry* (2)
Drafting-room fee, \$5. Drafting (6 hours).
- 7 *Machine Drawing* (2)
Prerequisite: Mechanical Engineering 3 and 4. Drafting-room fee, \$5. Drafting (6 hours).
- 8 *Mechanism Drawing* (2)
Prerequisite: Mechanical Engineering 3, 4, and 13. Prerequisite or concurrent registration: Mechanical Engineering 14. Drafting-room fee, \$5. Drafting (6 hours).
- 13-14 *Mechanism* (2-2)
Prerequisite: Mathematics 19. Prerequisite or concurrent registration: Mathematics 20.
- 111-12 *Thermodynamics* (3-3)
With introductory study of laws of heat transmission. Prerequisite: junior status.
- 115-16 *Mechanical Laboratory* (2-2)
Calibration of instruments; calorimetry; testing of prime movers, auxiliaries, combustion engines, and refrigerating machines. Eight-hour power-plant test required. Prerequisite: senior status. Laboratory fee, \$9 a term. Laboratory (6 hours).
- 126 *Methods of Manufacture* (2)
Foundry practices, forging, welding, machine tools, inspection, factory processes. Inspection trips required. Prerequisite: Mechanical Engineering 8 and 14; Civil Engineering 26.
- 127-28 *Machine Design* (2-2)
With stress-analysis computation and design periods (6 hours). Prerequisite: Mechanical Engineering 7, 8, and 112; Civil Engineering 26, 136, and 140. Drafting-room fee, \$3 a term.
- 129-30 *Power Plants* (3-3)
Study of design, layout, installation, and operation of power plants and equipment, with emphasis on heat transmission and instrumentation. Prerequisite: Mechanical Engineering 112.
- 131-32 *Heating, Ventilating, Air Conditioning, and Refrigeration* (2-2)
Principles and applications. Prerequisite: Mechanical Engineering 112; Civil Engineering 26 and 136.

- 133 *Combustion Engines* (2)
Study of spark-ignition and compression-ignition engines, combustion, performance, fuels, knock, supercharging and combustion charts. Inspection trips required. Prerequisite: Mechanical Engineering 112; senior status.
- 139 *Fluid Dynamics* (3)
Theory and application of fluid mechanics. Prerequisite: Mechanical Engineering 112; Civil Engineering 140.
- 140 *Dynamics of Machinery* (3)
Inertia effects, balancing, vibration phenomena. Prerequisite: Mechanical Engineering 7, 8, and 14; Civil Engineering 140.
- 141-42 *Management Problems* (2-2)
Organization of an industrial enterprise; the handling and training of men. Prerequisite: Economics 1-2.
- 145 *Production Control and Planning* (2)
Scope of production controls, product analysis, planning and routing systems and methods. Prerequisite: Mechanical Engineering 141-42.
- 146 *Engineering Patent Procedure* (2)
Nature and purpose of patents, procedures for preparing and filing patent applications, trade marks and design patents, employer-employee relations. Prerequisite: Mechanical Engineering 141-42.
- 147 *Industrial Labor Relations* (2)
Prerequisite: Mechanical Engineering 141-42.
- 149-90 *Proseminar in Mechanical Engineering* (1-1)
Prerequisite: Speech 1; senior status.
- 201 *Instrumentation* (3)
Theory of measurement and instrumentation systems. Physical principles involved in research and commercial instrumentation. Design problems.
- 202 *Advanced Dynamics of Machinery* (3)
Free, damped, and forced vibrations of mechanical systems; the dynamic response of elastic systems. Selected topics in vibration isolation and control.
- 203 *Advanced Fluid Dynamics* (3)
Advanced mechanics of real and ideal fluids, potential theory, turbulence, boundary layer mechanics, hydrodynamic lubrication.
- 204 *Heat Transfer Thermodynamics* (3)
Advanced problems in compression of gases and liquids; combustion. Heat transfer problems involving radiation, convection, conduction, evaporation, and condensation.
- 217-18 *Seminar in Engineering* (1-1)
- 297-300 *Thesis* (3-3)

REQUIRED AND ELECTIVE COURSES FROM OTHER DEPARTMENTS

On the following pages appears a partial list of courses in other departments of instruction which are closely related to engineering. Some of these courses are prescribed in the several curricula of the School of Engineering; all are recommended as suitable elective subjects for engineering students.

ACCOUNTING

- 1-2 *Introductory Accounting* (3-3)
Basic principles of accounting records, preparation of work sheets and financial statements, introduction to cost accounting and valuation, and income determination problems.
- 101 *Cost Accounting* (3)
Theory and purposes of cost accounting, systems of cost control and determination, analysis and interpretation of cost data.
- 111 *Financial Statement Analysis* (3)
Methods and techniques of preparing, analyzing and interpreting financial statements. Determination and interpretation of trends and ratios.
- 155 *Business Budgeting* (3)
Principles, preparation, and administration of a business budget.

AIR SCIENCE

- 1-2 *Air Science I—Freshman Year* (2-2)
- 51-52 *Air Science II—Sophomore Year* (2-2)
- 101-2 *Air Science III—Junior Year* (3-3)
- 151-52 *Air Science IV—Senior Year* (3-3)

BUSINESS ADMINISTRATION

- 101 *Business Organization and Combination* (3)
Simple and interrelated forms of business enterprise and their control by government.
- 105 *Personnel Management in Industry* (3)
- 106 *Problems in Personnel Management* (3)
Illustrated by cases drawn from business and industry.
- 109 *Office Management* (3)

- 121 *General Insurance* (3)
Principles of property, life, marine, and casualty insurance; the function of insurance in the economic life of a business and individual.
- 131 *Business Finance* (3)
Prerequisite: Accounting 1-2.
- 141 *Principles of Marketing* (3)
Survey of marketing, stressing consumption, retailing, wholesaling, and sales management; entire marketing structure and its relation to the total economy.
- 145 *Sales Management* (3)
Organization of sales department, sales planning and forecasting, quotas, territories, performance standards, analysis and control of distribution costs. Prerequisite: Business Administration 141.
- 150 *Principles of Purchasing* (3)
Organization for purchasing, purchasing policies, market relationships, selection of merchandise, purchasing information and records.

CHEMISTRY

- 111-12 *General Chemistry* (4-4)
Prerequisite: one year of high school algebra. Lecture, laboratory, and recitation. Laboratory fee, \$15 a term.
- 21 *Qualitative Inorganic Analysis* (4)
Prerequisite: Chemistry 12. Lecture and laboratory. Laboratory fee, \$15.
- 22 *Quantitative Inorganic Analysis I* (4)
Prerequisite: Chemistry 21. Lecture and laboratory. Laboratory fee, \$15.
- 111-12 *Physical Chemistry Lectures* (3-3)
Students registering for Chemistry 111-12 must register concurrently for Chemistry 113-14 unless they already have credit for physical chemistry laboratory. Prerequisite: Chemistry 22 and 152; Mathematics 20; Physics 8.
- 113-14 *Physical Chemistry Laboratory* (2-2)
Laboratory to accompany Chemistry 111-12. Students registering for Chemistry 113-14 must register concurrently for Chemistry 111-12 unless they already have credit for lectures in physical chemistry. Laboratory fee, \$15 a term.
- 122 *Quantitative Inorganic Analysis II* (4)
A continuation of Chemistry 22. Prerequisite: Chemistry 22. Lecture and Laboratory. Laboratory fee, \$15.

- 135 *Inorganic Chemistry: Preparations* (2)
Prerequisite: Chemistry 152; prerequisite or concurrent registration: Chemistry 111-12 and 113-14. Laboratory fee, \$15.
- †151-52 *Organic Chemistry* (4-4)
Chemistry of the carbon compounds. Prerequisite: Chemistry 21. Lecture and laboratory. Chemistry 151 laboratory fee, \$9; Chemistry 152 laboratory fee, \$15.
- 155 *Organic Chemistry: Preparations* (2 or 3)
The synthesis of organic compounds and the application of the technique of organic chemistry to the preparation of pure compounds, using larger amounts and greater refinements than in Chemistry 151-52. Prerequisite: Chemistry 22 and 152. Laboratory fee, \$9 a credit hour.

ECONOMICS

- 1-2 *Principles of Economics* (3-3)
Survey of the major economic principles, institutions, and problems in contemporary economic life. Economics 1 is prerequisite to Economics 2.
- 121 *Money and Banking* (3)
Theory of money, credit, and banking; commercial banking and the Federal Reserve System; other financial institutions; international aspects of money; current financial problems.
- 122 *The Supply and Control of Money* (3)
Factors determining the effect of bank policy and government finance on the volume of purchasing power and level of prices; historical development; current practices and problems. Prerequisite: Economics 121.
- 141-42 *Labor Economics* (3-3)
Wages, hours, and employment; labor organizations; labor legislation and federal administrative boards.
- 175 *Railroad Transportation* (3)
Railroad history, organization, rate-making theory and practice, with emphasis on the work of the Interstate Commerce Commission.
- 176 *Motor, Air, and Water Transportation* (3)
History, organization, competition, rates, and regulations of motor, air, and water carriers; coordination of transportation.

ENGLISH

- 1 *English Composition** (3)
Review of grammar, exercises in composition, readings.

* Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both terms of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A.

2 *English Composition** (3)

Exercises in composition, readings. The second term of the six-hour English Composition course required of all students.

11 *The Writing of Reports* (3)

Theory and practice in the writing of technical reports. Prerequisite: English 1, 2.

MATHEMATICS

3 *College Algebra* (3)

Prerequisite: one year each of high school algebra and high school geometry.

6 *Plane Trigonometry* (3)

Prerequisite: two years of high school algebra and one year of high school geometry or Mathematics 3 (or concurrent registration therefor).

12 *Analytic Geometry* (3)

Prerequisite: Mathematics 3 and 6, or two years of high school algebra, one year of high school geometry, and one-half year of high school trigonometry.

19 *Differential Calculus* (3)

Prerequisite: Mathematics 12.

20 *Integral Calculus* (3)

Prerequisite: Mathematics 19.

102 *Fundamental Concepts of Mathematics* (3)

112 *Mathematics for Engineers and Scientists* (3)

Topics from advanced calculus, partial differential equations, vector analysis, and complex variables. Prerequisite: Mathematics 132.

123 *Theory of Equations* (3)

125 *Advanced Algebra* (3)

126 *Advanced Analytic Geometry* (3)

Prerequisite: Mathematics 171.

132 *Differential Equations* (3)

134 *Introduction to Boundary Value Problems* (3)

Prerequisite: Mathematics 132.

135-36 *Projective Geometry* (2-2)

139 *Advanced Calculus* (3)

*See footnote page 66.

- 140 *Introduction to Analysis* (3)
 141 *Introduction to Infinite Series* (3)
 167 *Fourier Series and Spherical Harmonics* (3)
 Prerequisite: Mathematics 132.
 171 *Vector Analysis* (3)

PHYSICAL EDUCATION

- 1-2 *Freshman Physical Education* (1-1)
 Locker and towel fee, \$3.
 11-12 *Sophomore Physical Education* (1-1)
 Locker and towel fee, \$3.

PHYSICS

- 5 *General Physics* (3)
 Light, heat, force, energy, and the properties of matter. Prerequisite: high school algebra and plane geometry. Lecture, laboratory, and recitation. Material fee, \$9.
 6 *General Physics* (3)
 Mechanics, wave-motion, sound, and optical instruments. Prerequisite: Physics 5*; high school algebra and plane geometry. Lecture, laboratory, and recitation. Material fee, \$9.
 7 *General Physics* (3)
 Elementary electricity and magnetism. Offered fall term. Prerequisite: Physics 5*; high school algebra and plane geometry. Lecture, laboratory, and recitation. Material fee, \$9.
 8 *General Physics* (3)
 This course is the fourth in the sequence of courses 5, 6, 7, and 8, and emphasizes the connection between the fundamental principles studied in courses 5, 6, and 7, and the phenomena and theories of modern physics. Topics considered include electromagnetic waves (light, radio, and X-rays), atomic and molecular structure, radioactivity, nuclear physics, the quantum theory of matter and radiation, and the elementary particles such as electrons, protons, neutrons, and mesons. Prerequisite: Physics 6 and 7.
 55 *Physical Measurements* (3)
 Theory and methods of precise measurement. Prerequisite: Physics 6 and 7; Mathematics 19. Lecture and laboratory. Material fee, \$9.
 102 *Heat and Thermodynamics* (3)
 Thermometry, calorimetry, heat conduction, the laws of thermo-

* This prerequisite may be waived for students who have credit for a high school Physics course which included individual laboratory work, providing they pass the qualifying examination given at the dates specified in the University calendar.

dynamics with application to physical systems. Prerequisite: Physics 8; Mathematics 20.

105 **Principles of Electricity (3)**

Electricity and magnetism; circuit theory, including elementary alternating-current circuits; terrestrial magnetism; atmospheric electricity. Prerequisite: Physics 8; Mathematics 20.

106 **Optics (3)**

Geometrical optics; elementary theory of wave motions; interference, diffraction, polarization, and dispersion of light; laws of black-body radiation. Prerequisite: Physics 8; Mathematics 20.

113 **Atomic Physics (3)**

Properties of the electron and the other fundamental particles of physics; the photoelectric effect; X-rays and crystal structure; wave aspects of particles; elements of the quantum theory; atomic spectra and atomic structure. Prerequisite: Physics 8; Mathematics 20.

114 **Statistical Physics (3)**

Applications of classical and quantum statistics to the physics of solids, liquids, and gases. Topics discussed include fluctuations in gases and liquids, equipartition of energy, specific heats of solids, and experimental errors. Prerequisite: Physics 113.

123 **Nuclear Physics (3)**

Structure and stability of atomic nuclei, spontaneous transformations, nuclear reactions, astrophysical applications, nuclear fission. Prerequisite: Physics 113.

128 **Sound (3)**

Production, propagation, and detection of sound waves; vibrations of sounding bodies; acoustic instruments and acoustic measurements. Prerequisite: Physics 8; Mathematics 20.

132 **Electronics (3)**

The phenomena of electron emission from solids; the physical properties of electron tubes, and the principles underlying their basic applications. Prerequisite: Physics 8 and 55, and Physics 105 or Electrical Engineering 10. Lecture and Laboratory. Material fee, \$9.

133 **Electronic Circuits (3)**

A continuation of Physics 132. Includes basic radiofrequency applications of electron tubes, and special types of tubes such as klystrons, resonators, and magnetrons. Lectures and problems. Prerequisite: Physics 132; Electrical Engineering 107.

55-56 **Advanced Physical Measurements (3-3)**

Optional programs of experiments in electricity and magnetism, optics, or atomic physics. Corresponding prerequisites are Physics 105, 106, or 113, or the equivalent. In addition, Physics 55 is a general prerequisite. Material fee, \$9.

POLITICAL SCIENCE

9-10 *Government of the United States* (3-3)

127 *Commercial Law: Contracts, Sales, Agency, and Bailments* (3)

SPEECH

I *Effective Speaking* (3)

STATISTICS

†91-92 *Principles of Statistical Methods* (3-3)
Prerequisite: one entrance unit in algebra. Lecture and laboratory.
Laboratory fee, \$6 a term.

111 *Business and Economic Statistics I* (3)
Characteristic values, measures of variability, sampling processes, sampling distributions, and simple correlation. Admission by permission of the instructor.

112 *Business and Economic Statistics II* (3)
Multiple and partial correlation, time series analysis, index numbers, business cycles, demand functions, and depreciation schedules. Prerequisite: Statistics 111 or the equivalent.

117 *Analysis of Variance* (3)
Prerequisite: Statistics 91-92.

118 *Correlation and the Chi-Square Test* (3)
Prerequisite: Statistics 91-92.

†155-56 *Mathematical Probability* (3-3)
Prerequisite: Mathematics 20 and Statistics 91-92.

†157-58 *Mathematical Statistics* (3-3)
Prerequisite or concurrent registration: Statistics 155-56.

ALUMNI AND ALLIED ASSOCIATIONS

THE GENERAL ALUMNI ASSOCIATION

The objects of this Association are to unite the graduates in closer sympathy and to promote the general welfare of the University. The following persons are eligible for *active* membership: graduates of any college, school, or division of the University; holders of honorary degrees from the University; and members of the Board of Trustees and of the Faculty of the University. Any person who has matriculated, who has been in regular attendance for one year, and who has left the University in good standing, is eligible for *associate* membership. The Alumni Office is situated at 2018 I Street, Washington, D. C. Alumni are urged to keep the office informed of changes of address or occupation and to supply information with regard to their fellow alumni.

THE ENGINEER ALUMNI ASSOCIATION OF THE GEORGE WASHINGTON UNIVERSITY

The Engineer Alumni Association was organized in 1936 and has been affiliated with the General Alumni Association since that time. Its objects are to unite the graduates and Faculty of the School of Engineering in closer fellowship, to promote the general welfare of the School of Engineering and of the University at large, to foster activities of the engineering organizations recognized by the University, and to advance the profession of engineering in general.

THE GRADUATE ENDOWMENT FUND

The Graduate Endowment Fund was founded by the class of 1926 with the object of providing endowment to be used for the development of the University. Membership is limited to seniors and graduates who give a pledge of \$100, payable annually in ten equal installments. The pledge notes and funds are held in trust. When the principal reaches the sum of \$100,000, the Board of Administrators of the Fund may pay to the University such sums as it may vote for erection of buildings, acquisition of sites, maintenance, and purchase of equipment. At no time may money be drawn so as to leave a balance of less than \$10,000 on deposit. On request, the Alumni Office of the University will furnish pledge books to alumni.

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ARTICLE I

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SECTION 2

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CALENDAR

1953-54

CALENDAR OF THE SCHOOL OF EDUCATION

1953-54

Date	Day	Occasion
1953		
FALL TERM:		
Sept. 22....	Tuesday	Curriculum assembly for all new students
Sept. 23....	Wednesday	Pre-advising for all new students
Sept. 24-25..	Thursday and Friday..	Registration
Sept. 28....	Monday	Academic year begins
Oct. 9.....	Friday	Thesis subjects of February Master's candidates due
Oct. 10.....	Saturday	Applications for Doctoral and Master's October comprehensive examinations due
Oct. 16.....	Friday	Dissertation subjects of June Doctoral candidates due
Oct. 17.....	Saturday	Comprehensive examinations for Doctoral and Master's candidates
Oct. 30.....	Friday	Bachelor of Arts activities plans due
Nov. 11.....	Wednesday	Fall Convocation. Holiday
Nov. 26-28..	Thursday through Saturday	Thanksgiving recess
Dec. 5.....	Saturday	Applications for Doctoral and Master's January comprehensive examinations due
Dec. 21- Jan. 2....	Monday through Saturday	Christmas recess
1954		
Jan. 4.....	Monday	Classes resume
Jan. 8.....	Friday	Last day for applications for degrees to be conferred in February
Jan. 9.....	Saturday	Theses of February Master's candidates due
Jan. 20.....	Wednesday	Dissertations of February Doctoral candidates due
Jan. 25- Feb. 2....	Monday through Tuesday	Comprehensive examinations for Doctoral and Master's candidates
FEB. 4 and 5	Thursday and Friday..	Last day of classes for the fall term
FEB. 8.....	Monday	Fall examination period
FEB. 19.....	Friday	Registration
FEB. 22.....	Monday	Classes resume for the spring term
		Thesis subjects for June Master's candidates due
		Winter Convocation. Holiday

CALENDAR OF THE SCHOOL OF EDUCATION—Continued

Date	Day	Occasion
Feb. 27.....	Saturday	Activities plans due from Bachelor of Arts candidates entering the School of Education in February
March 6.....	Saturday	Applications for Doctoral and Master's April comprehensive examinations due
March 13....	Saturday	Dissertation subjects of November Doctoral candidates due
April 10.....	Saturday	Comprehensive examinations for Doctoral and Master's candidates
April 15.....	Thursday	Dissertations of June Doctoral candidates due
		Dissertation subjects of February Doctoral candidates due
April 16-21.	Friday through Saturday	Easter recess
May 7.....	Friday	Theses of June Master's candidates due
May 19.....	Wednesday	Last day of classes for the spring term
May 24- June 1....	Monday through Tuesday	Spring term examination period
June 6.....	Sunday	Baccalaureate Sermon
June 9.....	Wednesday	Commencement
SUMMER TERM		
June 14.....	Monday	Registration and the first day of classes of the pre-session
June 21.....	Monday	Registration
June 22....	Tuesday	Classes begin for the eight-week term
July 2.....	Friday	Pre-session ends
July 5.....	Monday	Registration and the first day of classes of six-week session
July 14.....	Wednesday	Applications for Doctoral and Master's July comprehensive examinations due
July 28.....	Wednesday	Comprehensive examinations for Doctoral and Master's candidates
Aug. 13.....	Friday	Six-week session ends
Aug. 16.....	Monday	Eight-week term ends
		Theses of November Master's candidates due
		Registration and first day of classes of the post-session
Sept. 3.....	Friday	Post-session ends
Sept. 10.....	Friday	Dissertations of November Doctoral candidates due
Sept. 23 and 24	Thursday and Friday..	Registration for the fall term of the academic year 1954-55

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THE UNIVERSITY

The Board of Trustees of the University is composed of the President of the University ex officio and the following persons by election:

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John Frederick Brougher, A.M., Ed.D., *Professorial Lecturer in Education*

Milo Frederick Christiansen, B.S., M.R., *Professorial Lecturer in Physical Education*

George Frederick Anderson, M.S., Ed.D., *Professorial Lecturer in Physical Education*

Carl Francis Hansen, Ed.D., *Professorial Lecturer in Education*

Kathryn Mildred Towne, A.M., *Associate Professor of Home Economics*

*The President of the University, the Dean of Faculties of the University, the Dean of the School, the Registrar of the University, the Director of Admissions of the University, Professors, Assistant Professors, Associate Professors, Assistant Professors, and Instructors constitute the Faculty.

- Joseph Henry Krupa, M.S., Ed.D., *Associate Professor of Physical Education for Men*
 Elizabeth Burtner, A.M., *Associate Professor of Physical Education for Women*
 Calvin Weir Pettit, Ph.D., *Associate Professor of Speech*
 Don Carlos Faith, Ph.D., *Associate Professor of Educational Psychology*
 Raymond George Hanken, B.S. in P.E., A.M. in Ed., *Associate Professor of Physical Education for Men*
 Vincent James DeAngelis, B.S. in P.E., A.M. in Ed., *Assistant Professor of Physical Education for Men*
 Mildred Hollander Shott, A.M., *Assistant Professor of Secretarial Studies*
 Madaline Kinter Remmlein, Ph.D., J.D., *Lecturer in Education*
 LuVerne Crabtree Walker, A.M., *Lecturer in Education*
 *Helen Barton Goodwin, A.M., *Lecturer in Education*
 Florence Mary Lumsden, A.M., Ed.D., *Lecturer in Education*
 William Samuel Rumbough, A.M., Ed.D., *Lecturer in Education*
 Howard Odin Johnson, A.M., Ed.D., *Lecturer in Education; Intern in Educational Administration*
 Frederick Anderson Indorf, A.M., *Lecturer in Education*
 Raymond Ray Reed, A.M., *Lecturer in Education*
 Joseph Bueol Johnson, A.M., Ed.D., *Lecturer in Education*
 Mary Ellen Coleman, A.M., *Lecturer in Education*
 Mary Louise Collings, A.M., *Lecturer in Education*
 Grover LaMarr Angel, A.M., Ed.D., *Lecturer in Education*
 Mary Grau, A.M., Ed.D., *Lecturer in Education*
 Roberta Shewmaker Barnes, A.M., *Lecturer in Education*
 Eugenia Nowlin, A.M., *Lecturer in Education*
 Roland Henry Tanck, A.M., *Instructor in Psychology*
 John Carl Lang, A.M., Ed.D., *Intern in Educational Administration*
 Nellie Zetta Thompson, A.M., *Intern in Educational Administration*

CONSULTANTS IN RESEARCH

- Wesley Earl Armstrong, M.S., Ed.D., *Chief for Teacher Education, U. S. Office of Education*
 John Robert Ludington, Ph.D., *Specialist of Industrial Arts, U. S. Office of Education*
 Francis James Brown, Ph.D., *Staff Associate, American Council on Education*

* On leave of absence 1953-54.

FIELD SERVICE COORDINATORS

William Wallace Rich, A.M., *Supervisor of Secondary Schools, Arlington County, Virginia*
Helen King Finlay, A.M., *Assistant Principal, Washington-Lee High School, Arlington, Virginia*

COMMITTEES •

THE DEAN'S COUNCIL ‡

1954

Raymond George Hanken
Ralph Windsor Ruffner

1955

Frances Kirkpatrick
Elizabeth Burtner

1956

Frank Mark Weida
Burnice Herman Jarman

COMMITTEE ON ADMISSION AND ADVANCED STANDING

The Dean of the School, *Chairman*

Harold Griffith Sutton
Frances Kirkpatrick
William Henry Myers

Frank Mark Weida
Burnice Herman Jarman
Ruth Harriet Atwell

COMMITTEE ON SCHOLARSHIP

Blake Smith Root, *Chairman*

William Henry Myers

Helen Bennett Lawrence

Kathryn Mildred Towne

• The President of the University and the Dean of the School of Education are members ex officio of all committees.
‡ Elected by the Faculty.

GENERAL INFORMATION

INTRODUCTORY

It is the purpose of the School of Education to prepare teachers, supervisors, and administrators for the higher ranges of educational service and to offer opportunities to teachers of experience to extend their education. The School includes the departments of Education, Physical Education, and Home Economics.* It offers both graduate and undergraduate work. Other departments of the University provide general education and subject-matter courses needed for a well-balanced program of teacher education.

The schedule of courses is arranged to meet the convenience of both full-time and part-time students. By attending evening, Saturday, and summer classes, teachers in the schools of Washington and the vicinity may complete all the requirements for a degree without giving up their positions.

HISTORICAL DEVELOPMENT

The University began offering professional courses for teachers in 1904-5 and in 1907 it established a Division of Education. In 1909, the Division of Education became the Teachers College which, in its early years, was concerned largely with teacher preparation on the undergraduate level.

In 1928, the Teachers College became the School of Education and greater provision was made for advanced study. Since that time the graduate enrollment has steadily increased with the result that today the School has a considerably larger number of graduate than undergraduate students.

ADVANTAGES OF STUDY IN THE NATION'S CAPITAL

Washington is rich in the resources needed by teachers to supplement classroom instruction. In addition to the library facilities of the University, the Library of Congress, the Library of the Office of Education, and many special collections provide unexcelled opportunities for reading and research. The operation of all branches of the National Government may be observed. Among the art galleries are the National Gallery of Art, the Corcoran Gallery of Art, the Freer Art Gallery, Phillips Memorial Gallery, and the National Museum. The music calendar of Washington is a full one, and includes concerts by the National Symphony Orchestra, Philadelphia Orchestra, and the Boston

* The Department of Home Economics offers a curriculum in home-making. Its program is described in a special announcement.

Symphony Orchestra. Those interested in science find many resources for study at the National Museum, the National Zoological Park, the United States Botanic Garden, and the Aquarium of the Fish and Wildlife Service, Department of the Interior. Teachers have unique opportunities to become acquainted with the work of the Office of Education, the National Education Association, the American Council on Education, and many other national organizations with headquarters in Washington.

ACADEMIC STATUS

The George Washington University is on the approved list of the Association of American Universities. This fact not only assures to students the academic standards of this association, but also is important to those who desire to transfer credits from one institution to another.

The University is also accredited by its regional accrediting agency, the Middle States Association of Colleges and Secondary Schools, and is on the approved list of the American Association of University Women.

The School of Education is a member of the American Association of Colleges for Teacher Education and was a charter member of the National Association of Colleges and Departments of Education prior to the merger of that association with others to form the American Association of Colleges for Teacher Education.

THE EDUCATION OF TEACHERS

PROGRAMS LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION FOR MEN

There are three curricula leading to this degree. The Single-Major and Subject-Certification Teacher's Course is designed to prepare students for teaching positions in smaller schools where it is necessary to teach an academic subject in addition to physical education. The Single-Major Teacher's Course prepares for the teaching of physical education in the larger schools. The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to the teaching of physical education.

The following courses, to be taken in the Junior College, are required for admission to the School of Education:

	Credit Hours
English	English 1, 2.....6
Social Studies	History 39-40, 71-72, Political Science 9-10, or Sociology 1-2 (Freshman year).....6
	Economics, History, or Political Science (Sophomore year) .....6
Science	Biology 1-2 or Zoology 1-2 (Freshman year).....6 or 8
Physical Education	8
Curriculum Electives.....	Physical Education 43-44, 47; Speech 1 or 11 (Freshman year) .....9
	Physical Education 45-46, 49, 50, 58; Psychology 1, 22 (Sophomore year).....18
Elective	9
Total.....	68 or 70

The minimum requirements for this degree are 66 credit hours, distributed as follows:

Single-Major and Subject-Certification Teacher's Course

The minimum requirements for this degree are twenty-one credit hours in education, twenty-four credit hours in physical education, eighteen credit hours in an academic teaching field, and three credit hours in physiology, distributed as follows:

JUNIOR YEAR		SENIOR YEAR	
	Credit Hours		Credit Hours
Learning and Teaching	6	Common Teaching Skills.....	3
Society and the School.....	6	Observation and Practice Teaching	6
History and Principles of Physical Education	3	Methods and Materials for Teaching Team Sports in Secondary Schools	4
Corrective Physical Education and Physical Examinations	3	Methods and Materials of Health Education	3
Techniques for Teaching Recreational Dance	1	Tests and Measurements in Physical Education	3
Methods and Practice in Teaching Physical Education Activities..	4	Organization and Administration of Physical Education	3
Physiology	3	Academic teaching field	11
Academic teaching field	7		
Total.....	33	Total.....	33

Single-Major Teacher's Course

The minimum requirements for this degree are twenty-one credit hours in education, twenty-eight credit hours in physical education, three credit hours in physiology, and fourteen credit hours of electives:

JUNIOR YEAR		SENIOR YEAR	
	Credit Hours		Credit Hours
Learning and Teaching	6	Common Teaching Skills	3
Society and the School	6	Observation and Practice Teaching	6
History and Principles of Physical Education	3	Corrective Physical Education and Physical Examinations	3
Techniques for Teaching Recreational Dance	1	Methods and Materials of Health Education	3
Leadership Organization in the Intramural Program	4	Tests and Measurements in Physical Education	3
Methods and Practice in Teaching Physical Education Activities..	4	Organization and Administration of Physical Education	3
Methods and Materials for Teaching Team Sports in Secondary Schools	4	Electives	12
Physiology	3		
Electives	2	Total.....	33
Total.....	33		

Physical Education and Recreation Course

The minimum requirements for this course are 66 credit hours, distributed as follows:

JUNIOR YEAR		Credit Hours	SENIOR YEAR		Credit Hours
Learning and Teaching	3		Common Teaching Skills	3	
Society and the School	6		Observation and Practice Teaching	6	
Introduction to Recreation	2		History and Principles of Physical Education	3	
Techniques for Teaching Recreational Dance	1		Methods and Materials of Health Education	3	
Leadership Organization in the Intramural Program	4		Tests and Measurements in Physical Education	3	
Methods and Practice in Teaching Physical Education Activities..	4		Organization and Administration of Physical Education	3	
Camp Leadership	1		Community Organization for Recreation	3	
Recreational Leadership Activities	6		Administration of Community Recreation Programs	2	
Electives	6		Electives	6	
Total.....	33		Total.....	33	

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION FOR WOMEN

There are three curricula leading to the degree. The Dual-Major Teacher's Course is designed to prepare students for positions in smaller schools where it is necessary to teach an academic subject in addition to Physical Education.

The Single-Major Teacher's Course prepares for the teaching of Physical Education in the larger schools. Within this course there is opportunity for specialization in dance, sports, or correctives.

The Physical Education and Recreation Course has been planned for those who wish to be prepared to direct programs of recreation in addition to teaching Physical Education.

For graduate courses in these areas see Programs of Study for the Degree of Master of Arts in Education, pages 24-28.

The following courses, to be taken in the Junior College, are required for admission to the School of Education:

	Credit Hours
English	6
English 1, 2.....	6
English 51-52, 71-72, or 91-92.....	6
Social Studies	6 or 8
History 39-40, 71-72; Political Science 9-10; or Sociology 1-2	6 or 8
Science	4
Biology 1-2 or Zoology 1-2.....	4
Physical Education	4
Curriculum Electives.....	16
Physical Education 43-44 (Freshman year).....	16
Physical Education 45-46, 49, 50; Psychology 1, 22 (Sophomore year)	6 or 8
Academic Electives.. (Each year)	64 or 66
Total.....	64 or 66

Dual- or Single-Major Teacher's Course

The student desiring to prepare herself to teach another subject in addition to Physical Education for Women may do so by choosing her elective hours from one subject-matter field with the advice of the Dean of the School of Education. Relevant work completed in the Junior College may be counted in this subject-matter field.

JUNIOR YEAR	Credit Hours	SENIOR YEAR	Credit Hours
Learning and Teaching	6	Society and the School	6
First Aid and Care of Athletic Injuries	2	Observation and Practice Teaching	6
Physical Education in the Elementary School	3	Methods and Practice in Teaching Physical Education Activities	4
History and Principles of Physical Education	3	School and Community Health Programs	3
Corrective Physical Education and Physical Examinations	6	Methods and Materials of Health Education	3
Techniques for Teaching Recreational Dance	1	Tests and Measurements in Physical Education	3
Methods and Materials for Teaching Team Sports in Secondary Schools	2	Organization and Administration of Physical Education	3
Methods of Teaching Modern Dance	2	Electives	6
Camp Leadership	1	Total	34
Physiology	3		
Electives	3		
Total	32		

Physical Education and Recreation Course

JUNIOR YEAR	Credit Hours	SENIOR YEAR	Credit Hours
Society and the School	6	Observation and Practice Teaching	6
Introduction to Recreation	2	History and Principles of Physical Education	3
First Aid and Care of Athletic Injuries	2	Methods and Practice in Teaching Physical Education Activities	4
Physical Education in the Elementary School	3	Camp Leadership	1
Corrective Physical Education and Physical Examinations	6	Organization and Administration of Physical Education	3
Techniques for Teaching Recreational Dance	1	Community Organization for Recreation	3
Leadership Organization in the Intramural Program	4	Administration of Community Recreation Programs	3
Methods and Materials for Teaching Team Sports in Secondary Schools	2	Electives	9
Methods of Teaching Modern Dance	2	Total	32
Recreation Leadership Activities	6		
Total	34		

PROGRAMS LEADING TO THE DEGREE OF BACHELOR OF ARTS IN EDUCATION

Programs leading to the degree of Bachelor of Arts in Education have three main objectives: (1) provision of a general educational background, (2) a functional command of ideas, concepts, knowledges, and skills in one or more teaching fields, and (3) a mastery of basic professional information and skills adequate for a beginning teacher. Since the contents of teaching fields differ in scope and complexity, some programs are longer than others in terms of credit hours. None require less than 126 credit hours of satisfactory work, exclusive of required Physical Education. Normally, 60 credit hours of the total requirement are completed in the Junior College of the University or in an equivalent institution elsewhere.

GENERAL EDUCATION

The general educational backgrounds needed by prospective teachers are obtained through: (1) pre-college education, (2) college courses, (3) work experience, (4) leadership activities, (5) participation in student campus activities, and (6) utilization of off-campus cultural opportunities.

College course requirements.—Course requirements depend in part upon the senior high school credits presented for college admission. They are as follows:

ENGLISH

- | | |
|---|----------------------|
| English 1, 2: English Composition | Credit
Hours
6 |
| Before students are registered in English 1, they are tested in the minimum essentials of vocabulary, spelling, grammar, standard usage, and writing skill. Those students who show marked superiority may, upon passing further tests, be exempted from one or both terms of the English Composition course; those who are inadequately prepared for English 1 will be assigned to English A. English 1 is a prerequisite to all other courses in English. | |
| One of the following survey courses in literature..... | 6 |
| English 51-52: Introduction to English Literature | |
| English 71-72: Introduction to American Literature | |
| English 91-92: Introduction to European Literature | |

FOREIGN LANGUAGES

- | | |
|--|----|
| French, German, Latin, or Spanish..... | 12 |
| A student offering for admission four acceptable high school units of a single foreign language, or the equivalent, is not required to take any foreign language. If he offers three units, he must complete the second term of the second-year college course in the same language. If he offers two units, he must complete the entire second-year college course in the same language. If he offers one unit, he must complete the second term of the first-year college course and the entire second-year course in the same language. | |

SOCIAL STUDIES

History 71-72: The Development of the Civilization of the United States	6
Another Social Science chosen from the following courses.....	6
Economics 1-2: Principles of Economics	
*Geography 51, 52: Introduction to Geography; World Regions	
History 39-40: The Development of European Civilization	
*Political Science 9-10: Government of the United States	
Sociology 1-2: Introductory Sociology	
Religion 59-60: History of Religions	
A student offering for admission two or more acceptable senior high school units in the Social Studies may be exempted from the second part of this requirement.	

SCIENCE AND MATHEMATICS

Two terms of science or mathematics to supplement senior high school courses in these fields and chosen from the following.....	6-8
Biology 1-2: Survey in Biology	
Botany 1-2: Structure and Functions of the Flowering Plant; Survey of the Plant Kingdom	
Chemistry 3-4: Survey of Physical Sciences	
Chemistry 11-12: General Chemistry	
Mathematics 3 and 6: College Algebra; Plane Trigonometry	
Mathematics 6 and 12: Plane Trigonometry; Analytic Geometry	
Physics 5 and 6, or 6 and 7: General Physics	
Zoology 1-2: Introduction to Zoology	

OTHER COURSES

Psychology 1: General Psychology	1
Psychology 22: Educational Psychology or	
*Psychology 29: Child Psychology	3
Speech 1: Effective Speaking or	
Speech 11: Training of the Speaking Voice.....	3
Students who demonstrate marked superiority in Speech may be exempted from this requirement. Such exemption is granted only on the recommendation of the Department of Speech.	
Statistics 53: Introduction to Statistics in Psychology and Education	3

ACADEMIC ELECTIVES

Electives may be increased through the various exemptions

PHYSICAL EDUCATION

Physical Education 1-2 and 11-12

A student may be exempted from this requirement if registered for less than three courses or regularly employed during the day.

Minimum required credits.....60 or 62

Work experience, leadership activities, participation in student campus activities, and the utilization of off-campus cultural opportunities.— Obviously, these cannot be prescribed. Nevertheless, they constitute an important part of the general educational background of prospective

* Required for those preparing for elementary school teaching.

teachers. In conference with a staff member of the Department of Education assigned as his general adviser, the student is expected to plan adequate experiences in these areas. Not later than one month after matriculation in the School of Education the student must file in the Office of the Dean a statement of such plans approved by his adviser. He must also keep his adviser informed concerning the fulfillment of his plans and to this end include in plans filed, scheduled conferences with his adviser.

Success of the student in enriching his general educational background by these means will be taken into consideration at the end of the first term of the junior year when the faculty will review the qualifications of candidates to determine any who are not of sufficient promise as prospective teachers to warrant continuation of their candidacies. Success in these activities will also be considered when the list of candidates is again reviewed early in the last term of the senior year immediately after the results of the National Teacher Examinations are available. In estimating the success of the student in this connection, more weight will be given to evidence of initiative, eagerness to make the most of each experience, balance, and quality of experience than to the number of different experiences.

Although the student is not required to establish a program of non-academic activities until he becomes a degree candidate in the School of Education, he is advised to do so as soon as he enters the Junior College. To this end, he should consult with the Junior College adviser of students in the pre-Education curriculum soon after entering the Junior College. Whatever is accomplished in this connection while in the Junior College will reduce the obligations of the student after admission to the School of Education.

TEACHING-FIELD PREPARATION

Teaching-field preparation depends upon the kind of teaching position for which the student is preparing. Those planning to teach in elementary schools need a degree of competency in several fields. Those preparing to teach in junior or senior high schools must demonstrate competency in a major teaching field and a minor teaching field. Ordinarily, students preparing to teach in evening schools for adults are required to prove competency in only one teaching field.

The student should begin teaching-field preparation while in the Junior College and should make provision for it in planning his program of studies.

Teaching-field requirements include satisfactory completion of prescribed academic courses, a satisfactory score on the special field examination of the National Teacher Examinations, and satisfactory completion of the prescribed special methods course.

Prescribed academic courses vary in number in accordance with the scope and complexity of the teaching field and the license requirements of the various states. Minimum academic course requirements for each major teaching field are listed on succeeding pages. Minor teaching-field requirements are somewhat less than those of a major field. They are determined in conference with an adviser.

The prescribed course in special methods is concerned primarily with methods of initiating, guiding, and evaluating learning experiences dealing with the content of the teaching field. It attempts to bring to the student specific suggestions drawn from the accumulated experience of successful teachers. However, in addition, the course reviews the teaching-field content currently in use in schools and the examination at the end of the course provides the final test of competency in the teaching field.

Prescribed Courses in the Various Teaching Fields

ART

	Credit Hours
One two-term course from the following group.....	6
Art 121-22: World History of Art	
Art 151-52: Modern Art	
Art 161-62: History of Art Criticism	
Two term courses from the following group.....	6
Art 71-72: Introduction to the Arts in America	
Art 101-2: The Design of the Home	
Art 141-42: Interior Decoration	
Art 143: Folk Arts of America	
Two two-term courses from the following group.....	24
Art 67-68: Drawing and Painting—Life and Portrait	
Art 75-76: Drawing and Painting—Life, Still Life, and Portrait	
Art 165-66: Drawing and Painting—Life and Portrait	
Art 175-76: Drawing and Painting—Life and Portrait	
Art 179-80: Sculpture	
Art 183-84: Design and Commercial Art	
Education 141-42: Teaching Art.....	6
Total.....	42

BIOLOGY

Biology 1-2: Survey in Biology.....	6
Botany 1: Structure and Functions of the Flowering Plant.....	3
Home Economics 152: Nutrition.....	3
Physiology 115: Physiology.....	3
Zoology 1-2: Introduction to Zoology.....	8
Additional courses as approved by the Adviser.....	12
Education 144: Teaching Science.....	3
Total.....	38

BUSINESS EDUCATION

Accounting 1: Introductory Accounting.....	3
Economics 1-2: Principles of Economics.....	0
Secretarial Studies 51: Business Correspondence.....	3
Additional courses as prescribed in <i>one</i> of the following groups:	

Group 1—Secretarial Studies

Secretarial Studies 2: Intermediate Typewriting.....	1
Secretarial Studies 12: Intermediate Shorthand and Transcription.....	1
Secretarial Studies 15: Advanced Shorthand, Typewriting, and Transcription.....	3
Secretarial Studies 16: Secretarial Shorthand, Typewriting, and Transcription.....	3
Secretarial Studies 54: Secretarial Practice.....	0
Additional courses from the following as approved by the Adviser:	
Accounting 2: Introductory Accounting.....	
Business Administration 101: Business Organization and Combination.....	
Business Administration 109: Office Management.....	
Business Administration 141: Principles of Marketing.....	
Business Administration 151: Retailing.....	
Economics 121: Money and Banking.....	
Political Science 127: Commercial Law.....	
Statistics 52: Mathematics of Finance.....	1
Education 150: Teaching Business Subjects.....	3

Total..... 35

Group 2—Bookkeeping, Business Arithmetic, and Business Law

Accounting 2: Introductory Accounting.....	3
Business Administration 101: Business Organization and Combination.....	3
Business Administration 102: Business Management.....	0
Political Science 127-28: Commercial Law.....	3
Statistics 52: Mathematics of Finance.....	0
Two of the following courses, as approved by the Adviser.....	
Accounting 111: Financial Statement Analysis.....	
Business Administration 121: General Insurance.....	
Business Administration 131: Business Finance.....	
Business Administration 138: Investments.....	
Economics 121: Money and Banking.....	2
Education 150: Teaching Business Subjects.....	1

Total..... 18

Group 3—Distributive Education

Business Administration 141: Principles of Marketing.....	3
Business Administration 142: Marketing Problems.....	3
Business Administration 145: Sales Management.....	3
Business Administration 151: Retailing.....	12
Four of the following courses, as approved by the Adviser.....	
Business Administration 146: Sales Management Problems.....	
Business Administration 147: Advertising.....	
Business Administration 150: Principles of Purchasing.....	

Business Administration 158: Traffic Management	
Business Administration 175: Introduction to Foreign Trade	
Business Administration 176: Exporting and Importing	
Education 150: Teaching Business Subjects.....	2
Total.....	38

CHEMISTRY

Chemistry 11-12: General Chemistry	8
Chemistry 21: Qualitative Inorganic Analysis.....	4
Chemistry 22: Quantitative Inorganic Analysis.....	4
Chemistry 151-52: Organic Chemistry	8
Chemistry 191: History of Chemistry.....	2
One of the following	8-10
Chemistry 111-12 and 113-14: Physical Chemistry	
Biochemistry 221-22: Biochemistry	
Education 144: Teaching Science.....	3
Total.....	37-39

ELEMENTARY EDUCATION

Education 113: Elementary School Art.....	3
Education 114: Elementary School Music.....	3
Education 128: Children's Literature	3
Science as approved by the Adviser	12-14
Geography 51: Introduction to Geography.....	3
Geography 52: World Regions	3
Physical Education 101: Physical Education in the Elementary School	3
Political Science 9-10: Government of the United States.....	6
Total.....	39-41

ENGLISH

English 1, 2: English Composition	6
English 52: Introduction to English Literature.....	3
English 71-72: Introduction to American Literature.....	6
English 125: The Evolution of Modern Speech.....	3
English 135-36: Shakespeare	6
Speech 11: Training the Speaking Voice.....	3
Three of the following term courses, with approval of Adviser.....	9
English 126: The Appreciation of Literature	
English 151-52: The Romantic Movement	
English 161-62: Victorian Literature	
English 165-66: The Twentieth Century	
English 171-72: Studies in American Literature	
English 173-74: Major American Poets	
English 176: American Drama	
English 177-78: American Fiction	
English 182: The English Novel	
English 199: Proseminar	
Education 136: Teaching English	3
Total.....	39

FRENCH

French 1-2: First-year French	6
French 3-4: Second-year French	6
French 9-10: French Conversation and Composition	6
French 51-52: Survey of French Literature and Civilization	12
Additional courses in French as approved by the Adviser	3
Education 146: Teaching Foreign Languages	
Total	39

GEOGRAPHY

Geography 51: Introduction to Geography	3
Geography 52: World Regions	3
Geography 71-72: Political Geography of the United States	6
Geography 103-4: Cartography	1
Geography 113: Geomorphology	3
Geography 114: Weather and Climate	6
Two of the following term courses	
Geography 181: Anglo-America	
Geography 183: Northwest Europe	
Geography 184: Mediterranean Region	
Geography 191: Middle America	
Geography 192: South America	
Geography 195: Eastern and Southern Asia	
Geography 198: Australia and the Pacific	6
Two of the following term courses	
Geography 125: Trade and Transportation	
Geography 126: Strategic Materials	
Geography 127: Industrial Geography	
Geography 128: Agricultural Geography	
Geography 131: Conservation of Natural Resources	
Geography 132: Land Use	
Geography 141: Geography of Settlement	
Geography 142: Urban Geography	
Geography 161: Geography of Soils	3
Education 138: Teaching the Social Studies	
Total	39

GERMAN

German 1-2: First-year German	6
German 3-4: Second-year German	6
German 9-10: Conversation and Composition	6
German 51-52: Introduction to German Literature	12
Additional courses in German, as approved by the Adviser	3
Education 146: Teaching Foreign Languages	
Total	39

HISTORY

History 39-40: The Development of European Civilization	6
History 71-72: The Development of the Civilization of the United States	6

Six credit hours, as approved by the Adviser, from each of the following groups	18
Group 1—American History	
History 171-72: Social History of the United States	
History 173: Representative Americans	
History 174: Economic History of the United States	
History 181-82: Diplomatic History of the United States	
Group 2—European History	
History 119: Thought and Culture of the Western World III; from the Reformation through the Age of Reason	
History 120: Thought and Culture of the Western World IV: Intellectual Aspects of the Modern Age	
History 130: Nationalism	
History 145-46: Russian History	
History 147: Economic History of Europe	
History 148: Oversea Expansion of Europe	
History 149-50: European Diplomatic History	
History 151-52: English History	
Group 3—Latin American History	
History 163: Latin American History—Colonial Period	
History 164: South America since Independence	
History 166: Mexico and the Caribbean since Independence	
Political Science 175: International Politics in the Western Hemisphere	
Political Science 176: Current Trends in Latin American Politics and Government	
Additional credit hours, as approved by the Adviser, from one of the foregoing groups	6
Education 138: Teaching the Social Studies	3
Total	39

MATHEMATICS

Mathematics 3: College Algebra	3
Mathematics 6: Plane Trigonometry	3
Mathematics 12: Analytic Geometry	3
Mathematics 19: Differential Calculus	3
Mathematics 20: Integral Calculus	3
Mathematics 125: Advanced Algebra	3
Mathematics 132: Differential Equations, or	
Mathematics 139: Advanced Calculus	3
An additional course in Mathematics, as approved by the Adviser	3
Statistics 52: Mathematics of Finance	3
Education 140: Teaching Mathematics	3
Total	30

PHYSICS

Physics 5, 6, 7, and 8: General Physics	12
Physics 55: Physical Measurements	3
Physics 101: Mechanics	3
Physics 105: Principles of Electricity	3
Physics 106: Optics	3

Chemistry Elective—Chemistry 11-12: General Chemistry or	
Chemistry 12-21: General Chemistry and Qualitative Inorganic	8
Analysis	3
Mathematics 12: Analytic Geometry.....	3
Mathematics 19: Differential Calculus.....	3
Mathematics 20: Integral Calculus.....	6
Six credit hours to be selected from the following.....	
Physics 102: Heat and Thermodynamics	
Physics 113: Atomic Physics	
Physics 114: Statistical Physics	
Physics 128: Sound	
Physics 132: Electronics	
Physics 155-56: Advanced Physical Measurements	3
Education 144: Teaching Science.....	30
Total.....	

SOCIAL STUDIES

History 39-40: The Development of European Civilization.....	6
History 71-72: The Development of the Civilization of the United	6
States	6
Political Science 9-10: Government of the United States.....	12
Two of the following courses.....	
Economics 1 2: Principles of Economics	
Geography 51, 52: Introduction to Geography and World Regions	
Religion 59-60: History of Religions	
Sociology 1-2: Introductory Sociology	
Additional second-group courses, as approved by the Adviser, from one	
of the following fields: Economics, Geography, History, Political	12
Science, Religion, Sociology	3
Education 138: Teaching Social Studies.....	45
Total.....	

SPANISH

Spanish 1-2: First-year Spanish.....	6
Spanish 3-4: Second-year Spanish.....	6
Spanish 9-10: Spanish Conversation and Composition.....	18
Additional courses, as approved by the Adviser.....	3
Education 146: Teaching Foreign Languages.....	39
Total.....	

SPEECH

Speech 1: Effective Speaking.....	3
Speech 2: Extempore Speaking	3
Speech 11: Training the Speaking Voice.....	3
Speech 32: Oral Reading.....	3
Speech 101: Voice and Phonetics.....	3
Speech 131: Group Discussion and Conference Leadership.....	3
Speech 153: Play Production.....	3
Speech 175: Speech Correction.....	3
Education 136: Teaching English.....	

One of the following areas of specialization, as approved by the Adviser:

Group 1—Speech Arts

Twelve credit hours to be chosen from the following..... 12

- Speech 102: Oral Interpretation of Literature
- Speech 109: Radio Speaking and Production
- Speech 136: Public Discussion and Debate
- Speech 148: Speeches for Special Occasions
- Speech 154: Play Production
- Speech 166: History of the Theatre
- Speech 169: Creative Dramatics and Children's Theatre

Group 2—Speech Correction

Twelve credit hours to be chosen from the following..... 12

- Speech 176: Speech Correction
- Speech 177-78: Clinical Practice in Speech Therapy
- Speech 180: Speech Pathology
- Speech 182: Introduction to Hearing Problems
- Speech 183-84: Clinical Practice in Hearing Therapy
- Additional courses in English, Physiology, Psychology, or Speech, as approved by the Adviser

Total..... 30

PROFESSIONAL EDUCATION

The basic professional information and skills needed by beginning teachers are provided through four one-year courses, two in each of the junior and senior years. Lectures and class discussions are closely coordinated with field work. Instruction is differentiated to meet the needs of those preparing to teach on the various levels—elementary school, junior high school, senior high school, and adult.

Professional Courses

Education 109-10: Learning and Teaching.....	6
Education 111-12: Elementary School Curriculum.....	6
Education 121-22: Society and the School.....	6
Education 131: Common Teaching Skills.....	3
Education 133-34: Observation and Practice Teaching.....	6
Education 136 to 150: Special Methods.....	2-6

Total..... 24-27

Learning and Teaching.—Candidates enrolled in four-year programs leading to the degree of Bachelor of Arts take this course in the junior year. Those enrolled in five-year programs take it in the senior year.

The course attempts to promote a functional understanding of the nature of learning and teaching—characteristics of learning and principles of teaching are presented and discussed in the two one-hour class meetings each week. At least an equal amount of time is spent in observation and study of the application of these characteristics and principles to classroom situations. Class discussion normally revolves around these field experiences.

* Not required of those preparing for secondary school teaching.
† Not required of those preparing for elementary school teaching.

The course is also intended to provide the student with exploratory experiences of assistance to him in deciding whether to choose the profession of teaching. The student's performance in connection with the course is one of the factors considered when the Faculty reviews the list of candidates who have completed the first term of the junior year (senior year for those enrolled in five-year programs).

Society and the School.—This course is also taken in the junior year by candidates enrolled in four-year programs (senior year by those in five-year programs).

The first term of the course attempts to promote an understanding and appreciation of the role of schools in the sound promotion of the enduring interests of our democratic society. More particularly, it attempts to develop a functional understanding of the contributions of all social agencies in the education of people and of desirable cooperative working relations that help the school to play its part as a member of the institutional "team" of the community.

The second term of the course is concerned with study of the school as a whole—its purposes, program of studies, out-of-class activities, general organization, and major instructional problems. Although schools at all levels are studied, students give particular attention to schools at the level within which they are preparing to teach.

During both terms of this course classes meet for lecture and discussion two hours a week. At least an equal amount of time is spent in field study. During the first term each student studies cooperating social institutions. In the second term extended study of schools at the level of the student's special interest is supplemented by briefer studies of schools at other levels. Class discussion is largely determined by field experiences.

This course is also intended to provide the student with exploratory experiences of guidance value. The performance of the student in the first term of the course is also given careful consideration by the Faculty in its review of the list of candidates at the beginning of the second term of the junior year (senior year for those enrolled in five-year programs).

Common Teaching Skills.—Those enrolled in four-year programs take this course in the senior year. Those enrolled in five-year programs take it in the fifth year.

The course is concerned with the skills needed by teachers in connection with classroom management, teaching techniques, homeroom procedures, administrative routines, activity sponsorship, group planning, and public relations.

Classes meet three hours a week for lecture, discussion, and laboratory. The observation of classroom teaching done in connection with the Observation Course (Education 133), for which students are normally enrolled concurrently, provides the field work of the course.

Special Methods Courses.—Associated with each teaching field is a course dealing with its special teaching problems. In addition to the study of practices followed by successful teachers, actual teaching content as found in current texts and courses of study is reviewed. Needed content, not included in academic courses available for teaching-field preparation, is taught in these courses.

Observation and Practice Teaching.—This course is taken in the senior year by students enrolled in four-year programs (in the fifth year by those in five-year programs).

It begins with the observation of classroom teaching in selected situations. Assumption of responsibility for teaching functions is gradual, leading eventually to practice in the complete direction of classroom activities. Those preparing to teach in secondary schools have the opportunity of observing and doing practice teaching in both major and minor teaching fields on the senior high school level. The course is directed by full-time members of the faculty of the School of Education. The work of each student is under the direct supervision of a critic teacher, selected because of unusual success in teaching, ability to supervise, and broad understanding of educational problems. Critic teachers are part-time members of the instructional staff of the School. Observation and teaching are done in the public schools of the metropolitan area of Washington, assuring practice in situations comparable to those the student is likely to face on becoming a teacher.

ADMISSION

To be admitted to candidacy for the degree of Bachelor of Arts in Education, the applicant must: (1) hold an Associate in Arts degree based on the Education Curriculum in the Junior College or the equivalent from another accredited higher institution, or a certificate of graduation from an approved normal school or the equivalent; (2) have a quality-point index of 2.00 (average grade of C) counting "Incomplete" grades as "F"; (3) have demonstrated a genuine interest in teaching and possess personality traits that give promise of success as a teacher; and (4) have an interview in the Office of the School of Education.

FIVE-YEAR PROGRAMS LEADING TO THE DEGREES OF BACHELOR OF ARTS AND MASTER OF ARTS IN EDUCATION

Five-year programs are designed: (1) to permit more adequate teaching-field and professional preparation, (2) to prepare for special teaching positions, and (3) to meet teaching-certificate requirements based upon five years of preparation.

Students in these programs usually devote the junior year to additional teaching-field preparation and general education. Ordinarily,

teaching-field preparation is continued in the senior year and the first two professional courses (Education 109-10, 121-22) are taken. The work of the fifth year includes the remaining undergraduate professional courses and the balance of graduate courses needed to meet the requirements of the degree of Master of Arts.

Candidates must have a quality-point index of at least 2.50 before beginning the work of the senior year. As much as 18 credit hours of the work of the senior year may be taken for graduate credit. Observation and Practice Teaching, taken in the fifth year, may not be taken for graduate credit.

Candidates enrolled in five-year programs are able to prepare more adequately in their major or minor teaching fields, or in both. Additional teaching-field courses must be approved by the Adviser in the teaching field concerned.

The five-year plan of study also provides an opportunity for candidates to prepare to teach "common learnings" courses in one or more of the various core curriculum plans now being adopted in many secondary schools. Such programs need to be carefully planned to meet the demands of the situation in which the candidate hopes to teach.

A number of cities and some states require five years of satisfactory preparation before issuing certain teaching certificates. Candidates seeking such certificates should familiarize themselves with the requirements of the community or state concerned and plan their programs accordingly.

Five-year programs must meet all the requirements of the degrees of Bachelor of Arts and Master of Arts in Education, and must be approved by the Adviser designated for these programs.

PROGRAMS LEADING TO THE DEGREE OF MASTER OF ARTS IN EDUCATION

Programs of study leading to the degree of Master of Arts are designed: (1) to enable teachers of experience to increase their knowledge of professional and academic information and skills, (2) to prepare for special types of educational service, and (3) to provide opportunities for graduates of liberal arts colleges to acquire needed professional education.

Programs are planned in conference with the designated Adviser and take into consideration the interests of the candidate, his previous background, and the certification requirements of the state and locality in which he plans to teach.

PLANS OF STUDY

Two general plans of study lead to the degree.

Plan 1.—This plan requires a minimum of 30 hours of graduate credit, including a thesis carrying 6 hours of graduate credit.

Plan 2.—This plan requires a minimum of 33 hours of graduate credit, including a course in *Educational Research Methods and Procedures* carrying 3 hours of graduate credit.

Graduate work completed in other accredited institutions of learning may be credited toward the Master's degree, but a minimum of 30 credit hours must be completed in the School of Education of The George Washington University. Not more than nine credit hours of the minimum thirty-hour requirement may be taken in off-campus courses.

Advanced courses completed in excess of the requirements for the Bachelor's degree in this University may be credited toward the Master's degree to the extent of 12 credit hours, provided the work fits in with the student's plan of specialization and is approved in writing by the Dean before being undertaken.

In determining advanced standing at the time of admission or re-admission to Master's candidacy at this University, graduate work completed more than three years previously is not counted.

Under Plan 1, a minimum of 12 credit hours, in addition to the thesis, must be from courses planned primarily for graduate students (third-group courses). Under Plan 2, a minimum of 18 credit hours, in addition to the course in *Educational Research Methods and Procedures*, must be from third-group courses. Under either plan a minimum of 12 credit hours, not including the thesis or the research course, must be from courses offered in the Department of Education.

Programs may provide for additional academic preparation in one or more teaching fields. In such cases, however, undergraduate and graduate courses combined must be at least equivalent to the undergraduate requirements for the degree of Bachelor of Arts in Education in the teaching field concerned.

Programs are normally based upon undergraduate preparation equivalent to the requirements of the degree of Bachelor of Arts in Education (see pages 12-13). Candidates with less professional preparation must make up their deficiencies either prerequisite to or as part of their graduate study.

Each candidate must file in the Office of the Dean not later than one month after admission to the School of Education a program of study approved by his Adviser.

COMPREHENSIVE EXAMINATION

In addition to the course examinations, the candidate must pass a professional comprehensive examination in two parts: (1) a general examination concerned with an integrated understanding of the major areas in professional education, and (2) a special examination concerned with the candidate's area of specialization.

The general part of the comprehensive examination is divided into

three groups as follows: Group I (Foundations) covers learning and teaching, society and the school, child growth and development, history of education, philosophy of education, and educational research; Group II (Major Levels) covers elementary education, secondary education, adult education, employee training, vocational education, and physical education; Group III (Common Elements) covers administration, curriculum, evaluation, guidance, methodology, and reading.

The candidate must be prepared to answer two questions in each group, none of which shall include his area of specialization.

PROGRAMS OF STUDY

School Administration—Secondary School Principalship, or Elementary School Principalship

Programs of those interested in the position of principal customarily include The American School System, The Teacher in School Supervision, and one of: Secondary School Management, or Administration of Elementary Education. Additional courses are chosen as needed from Adult Education, Curriculum, Elementary Education, Guidance, Public Relations, School Finance, School Law, School Plant Planning, and Secondary Education.

Adult Education

Programs of those particularly interested in the education of adults may or may not include additional teaching-field preparation. In addition to six credit hours of work in Adult Education professional courses may be chosen from Audio-visual Education, Curriculum, Employee Training, Evaluation, Guidance, History of Education, Mental Hygiene, and Philosophy of Education.

Secondary Education—Senior or Junior High School

Those who desire additional teaching-field preparation may combine advanced subject-matter courses in an academic field with professional courses. Programs usually include six credit hours of work in Secondary Education with additional courses chosen from Audio-visual Education, Curriculum, Extra-classroom Activities, Guidance in Secondary Schools, Philosophy of Education, Research, and Vocational Education.

Elementary Education—Intermediate Grade or Early Childhood Education

Programs customarily include one of: Elementary Education, or Early Childhood Education with additional courses chosen from Child Growth

and Development, Children's Literature, Curriculum, Evaluation, History of Education, Mental Hygiene, Philosophy of Education, Reading Problems, and Speech Correction.

Agricultural Extension Education

These programs are designed for those with successful experience in agricultural extension education. Six or more credit hours of work are devoted to agricultural extension education, by special arrangement with the Extension Service of the United States Department of Agriculture. The remainder of the program is planned in accordance with the interests and needs of the candidate and usually includes courses in Supervision, Adult Education, and Secondary Education. Courses in Administration, Curriculum, Evaluation, Group Leadership, Guidance, Personnel Psychology, Research, Speech, and Statistics may also be chosen.

Curriculum

Programs of those interested in specializing in curriculum development include six credit hours of work in Curriculum with additional courses chosen from Adult Education, Audio-visual Education, Child Growth and Development, Course of Study Construction, Elementary Education, Evaluation, Extra-classroom Activities, and Secondary Education.

Employee Training

Programs for those interested in the training of employees in business, industry, and government normally include courses in Employee Training and Adult Education. Additional courses are chosen from Audio-visual Education, Curriculum, Guidance, Mental Hygiene, Personnel Psychology, Philosophy of Education, Public Relations, and Techniques of Counseling.

Guidance

Programs for those especially interested in guidance usually include courses in Educational and Vocational Guidance, Techniques of Counseling, Guidance in Secondary Schools, and Occupational and Educational Information. Additional Courses frequently chosen include Adult Education, Curriculum, Employee Training, Evaluation, Individual Psychological Testing, Personnel Psychology, Philosophy of Education, Psychological Tests, Secondary Education, and Test Construction.

Physical Education

Programs of candidates who have had undergraduate training in Physical Education may include twelve credit hours of work in Health

Education, Physical Education, and Recreation. Four graduate courses: *Problems in Physical Education*, *Problems in Health Education*, *Evaluation in Physical Education*, and *Physical Education for the Atypical*, are offered, two each year in alternate years. Certain undergraduate courses may also be taken for graduate credit. These are available in the areas of Camping, Dance, Physical Education, and Recreation.

As a rule these programs include six credit hours of work in Secondary Education. Additional courses are chosen from Audio-visual Education, Curriculum, Extra-classroom Activities, Guidance, Philosophy of Education, Public Relations, and Supervision.

If *Plan 1* is followed the thesis problem may be from the field of Physical Education.

ADMISSION

To be admitted to candidacy for the degree of Master of Arts in Education the applicant must: (1) hold a Bachelor's degree from an accredited institution; (2) have an undergraduate quality-point index of 2.50 or above (C + average); (3) have demonstrated a genuine interest in teaching; (4) be in possession of personality traits that give promise of better-than-average success as a teacher.

To be admitted to candidacy in programs designed to prepare for service in guidance and administration two years of successful teaching experience are prerequisite. Candidates who have had no professional courses must satisfactorily complete the required undergraduate professional courses, including Observation and Practice Teaching, in addition to graduate course requirements.

PROGRAM LEADING TO THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education cannot be stated in credit hours, but they consist in general of at least two full years of work beyond the degree of Master of Arts in Education or the equivalent. The programs of study are designed to prepare students for administrative or supervisory positions, the teaching of education in normal schools or colleges, the teaching of an academic subject in schools or colleges, or for specialized types of educational service. The work is given a practical rather than a theoretical bent, and emphasizes the mastery and application of subject matter, both in the study requirements and in the dissertation. Special emphasis is placed upon the professional success of the candidate.

The candidate's program of study depends for the most part upon his previous educational background and his professional objective. Opportunities are provided for study leading to the following professional objectives:

School Superintendent
Secondary School Principal
Elementary School Principal
Supervisor

Director of Guidance
Director of Curriculum Development
Professor of Education
Specialist in Educational Research

QUALIFICATIONS OF THE APPLICANT

The candidate for the degree of Doctor of Education must have completed (1) graduate work in fields prerequisite to his objective, equivalent to that required for the degree of Master of Arts in Education in The George Washington University, and (2) at least three years of successful educational experience.

ADMISSION TO CANDIDACY

To be admitted to candidacy for the degree the applicant must be accepted by the Faculty of the School of Education on the basis of an examination conducted by a committee appointed by the Dean. This examination will usually include the following: (1) a written examination involving problems related to the applicant's background; (2) a scholastic-aptitude test; (3) an oral examination.

CONSULTATIVE COMMITTEE

If the applicant is accepted as a candidate, his consultative committee, in cooperation with the candidate, will (1) determine the candidate's fields of study, in each of which the candidate must pass a written examination at least eight months before he presents himself for the degree; (2) formulate a list of course requirements and of readings that will assist him in preparing for these examinations; and (3) designate the tools of investigation that will be needed by the candidate in the prosecution of his study. These tools may include one foreign language, or more, statistical methods, historical criticism, or any others considered essential by the committee. An examination in the tools designated must be passed by the candidate before he takes his comprehensive examination.

THE DISSERTATION

When the candidate has satisfied the requirements of his consultative committee, the committee is dissolved. A member of the faculty, in whose field the topic of the dissertation falls, is then appointed to serve as the candidate's adviser on his dissertation and in his field of specialization, and to recommend him to the Dean for the final oral examination when, in his judgment, the candidate's dissertation is acceptable.

Not later than the date specified in the University calendar the candidate shall submit to the Dean of the School of Education four copies

of his dissertation—one typewritten original and three legible and complete carbon copies, on official thesis paper—and also a typewritten summary of the dissertation consisting of not more than 2,500 words. Requirements regarding the form of the dissertation are stated in the general catalogue and additional information will be supplied by the Dean.

The successful candidate is required, before receiving his degree, to pay a fee to cover the expense of printing the summary of his dissertation.

THE FINAL EXAMINATION

At least three weeks before the degree is to be conferred the candidate must pass an oral examination on his dissertation and on his field of specialization before a committee of the Faculty appointed by the Dean, supplemented by two experts from outside the University appointed by the President. This examination is open to the public and all are privileged to question the candidate. The Dean, or a member of the Faculty designated by him, will preside at this examination.

READING CLINIC

To help children and adults with reading difficulties the University operates a diagnostic reading clinic. Children may be referred by principals, teachers, or parents. Adults may apply by telephone.

To arrange for a clinical examination of reading status, address The George Washington University Reading Clinic, 802 Twenty-first Street, N.W., or telephone NAtional 8-5200, Extension 491, for an appointment. The Clinic is open for appointments Monday through Friday, from 9:00 A.M. to 12:00 noon.

A complete diagnostic examination usually requires three sittings. When completed, a written report is given and a conference arranged at which disabilities are discussed in detail and suggestions for corrective work are outlined. The fee is \$25.

REGULATIONS

Students in the School of Education are subject to, and are expected to familiarize themselves with, the general University regulations stated in the University catalogue.

REGISTRATION

Before a student may be admitted to registration he must have satisfied the Office of the Director of Admissions that he is qualified for entrance to the University.

A student who has previously matriculated in the University, but who has not been in attendance during the term prior to registration, should file an application for readmission in advance of registration.

Registration is for the term unless otherwise indicated on the registration paper. No registration is accepted for less than a term or one summer session.

A student may not register concurrently in The George Washington University and another institution without the permission of the Dean. Allowance of credit for work done concurrently will be at the discretion of the Committee on Admission and Advanced Standing.

AMOUNT OF WORK

Normal work for any year is that outlined under the head of "Curriculum Requirements", below. A student who wishes to take more than the normal amount of work may do so only with the permission of the Committee on Scholarships, the members of which are guided in their decision by the scholastic record and the extent to which he is employed. A student on probation is limited in the number of credit hours he may carry.

The student is not encouraged to undertake outside employment while attempting a full course of study. A student who maintains a quality-point index of 2.00 or higher for all courses and a quality-point index of 2.50 or higher for pharmacy courses may be granted permission by the Dean to undertake outside employment. The amount of the employment permitted is governed by the scholarship record of the student and the number of credit hours for which he is registered.

A student previously unemployed who accepts employment subsequent to registration or at any time during a term is required to report that fact immediately to the Dean.

ATTENDANCE

A student is not permitted to attend classes until registration has been completed and fees due have been paid. Regular attendance is required. A student may be dropped from any course for undue absence.

A student who has been suspended, either for delinquency in payment of fees or for any other reason, is not permitted to attend classes during the period of suspension.

WITHDRAWAL

Withdrawal from a course or from the University, *without academic or financial penalty*, requires the permission of the Dean. Permission to withdraw from the University will not be granted a student who has not a clear financial record.

Withdrawal between October 31 and the end of the fall term and between February 28 and the end of the spring term is permitted only in exceptional cases.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

CHANGES IN PROGRAM OF STUDIES

A student may not change or drop courses or change his status to that of auditor except with the approval of the Dean upon presentation of adequate reasons for such changes.

Change from one section to another of the same course or from one major subject to another within the same college or school may be made with the approval of the Dean. All requirements specified in the course of study to which the change is made must be satisfied before graduation.

Transfer from one college, school, or division to another may be made only with the approval of the deans concerned. Applications for such change should be made on the proper form, obtainable in the Office of the Director of Admissions, where it should be filed.

SUMMER SCHOOL CREDIT

A student who plans to attend summer school sessions at another institution with the intention of having credits so obtained apply toward graduation from this University must first secure the written approval of the Dean. In no event will such credits be recognized to an amount in excess of that which might be earned in a similar period in this institution.

GRADUATION REQUIREMENTS

To be recommended for graduation a student must have met the admission requirements of the college or school in which he is registered, completed satisfactorily the scholarship, curriculum, residence, and other

requirements for the degree for which he is registered, and be free from all indebtedness to the University.

Application for Graduation.—Application for a degree should be filed in the Office of the Registrar at the time of registration for the last term of the senior or final year.

Scholarship.—The undergraduate student must maintain a quality-point index of at least 2.00.

The graduate student must maintain a quality-point index of 3.00.

Residence.—A minimum of one year, or thirty credit hours, including at least twelve credit hours in the major field, must be completed in residence. Not more than nine credit hours of the residence requirement may be satisfied by off-campus courses. Summer term work may be counted in residence, but in no case may the period of residence aggregate less than thirty weeks. Unless special permission is granted by the Dean to pursue work elsewhere, the work of the senior or final year must be completed in residence.

The graduate student must meet the residence requirements for the particular degree for which he is registered.

With the permission of the Dean a student may be granted leave of absence; such student should, however, remain technically in residence by paying the residence fee for each term he is absent. For the purpose of this regulation, the summer sessions will not be considered a term.

Attendance and Conduct.—The University reserves the right to refuse to confer a degree upon a candidate whose attendance or conduct has been unsatisfactory.

Presence at Graduation.—A candidate is required to be present at the graduation exercises unless written application for graduation in absentia is approved by the Dean.

THE LIBRARY

A student registered in the University is entitled to the reference use of the University Library. The University Membership Card, issued upon the payment of fees, must be presented as identification.

Library books, with the exception of those in the Law and Medical collections, may be drawn for home use for a period of two weeks. Any book which does circulate is subject to recall by the Librarian at any time. Reserve books and periodicals for collateral reading must be used in the reading rooms when the Library is open. With special permission they may be drawn for overnight use when the Library closes. A fine of twenty-five cents will be charged for the first hour or fraction of an hour and five cents for each hour or fraction thereafter that a reserve book is overdue. Grades of a student will be withheld until his library record is clear.

HOURS

The University Library is open from 9:00 A.M. to 10:00 P.M. each class day (Saturday 9:00 A.M. to 5:00 P.M.), and from 2:00 to 6:00 P.M. on Sunday.

FEES AND FINANCIAL REGULATIONS

By authorization of the Board of Trustees, the following fees have been adopted:

TUITION FEES

For each credit hour for which the student registers (except work taken by a candidate for a Doctor's degree).....	\$15.00
For the degree of Doctor of Education	
For work* leading to and including the general examination.....	450.00
For working leading to and including the final examination.....	450.00

ADDITIONAL COURSE FEES

In certain courses additional fees, such as laboratory and material fees, are charged as indicated in the course descriptions. These fees are charged by the term and, unless otherwise indicated, may be defrayed in three payments when the tuition is paid in this manner. Breakage of apparatus is charged against the individual student. When breakage is in excess of the normal amount provided for in the laboratory fee the individual student will be required to pay such additional charges as are determined by the department concerned.

GRADUATION FEE	20.00
FEE FOR BINDING MASTER'S THESIS.....	5.00
FEE FOR PRINTING AND FILING SUMMARY OF DOCTORAL DISSERTATION...	75.00
SPECIAL FEES	
Application fee, charged each applicant for admission, non-refundable	3.00
Late-registration fee, charged each student who fails to register within the designated period.....	5.00
Withdrawal fee, charged each student who preregisters and withdraws prior to the regular registration.....	5.00
Service fee, charged each student for late payment of tuition (see "Payment of Fees")	1.00
Reinstatement fee, charged each student who is reinstated after suspension for delinquency in fees.....	5.00
Residence fee, charged each student wishing to maintain "in residence" status during any term of absence from the University or after completion of tuition requirements.....	15.00
For special physical examination.....	2.00
For each examination to qualify for advanced standing and for each special examination	5.00
Laboratory checkout fee, charged each student in chemistry courses who fails to check out of the laboratory by the time set by the instructor	2.00
Transcript fee, charged for each transcript of record after the first	1.00

Registration in the University entitles each student to the following

* This fee does not cover the cost of tuition for elementary courses (numbered 1-100), for French 107, or German 107.

University privileges: (1) the issuance of one certified transcript of record, if and when desired; (2) the services of the Placement Office; (3) the use of University library facilities, except as otherwise designated; (4) gymnasium privileges; (5) admission to all athletic contests, unless otherwise specified; (6) subscription to the *University Hatchet*, the student newspaper; (7) admission to University debates; (8) medical attention and hospital services as described in the General Catalogue. These privileges, with the exception of the issuance of transcripts, terminate, and a student is no longer in residence, when he withdraws or is dismissed from the University.

PAYMENT OF FEES

All fees are payable at the Office of the Cashier, 725 Twenty-first Street NW. No student is permitted to complete registration or to attend classes until all fees are paid. Fees for each term are due and payable in advance at the time of registration.

In exceptional cases, subject to the approval of the Treasurer, the student may sign a contract for term charges, except for fees payable in advance, permitting payments as follows:

Fall Term.—One third at the time of registration; one third on November 3; one third on December 3.

Spring Term.—One third at the time of registration; one third on March 3; one third on April 3.

A student who fails to meet payments when due, but who pays his fees on or before the fifteenth of the month in which payment is due, is charged a service fee of \$1. A student who fails to meet payments by the fifteenth of the month in which payment is due will be automatically suspended and may not attend classes until he has been officially reinstated and has paid all accrued fees and a reinstatement fee of \$5.

A student suspended for failure to meet payments when due may not be reinstated for the term after two weeks from the date of suspension. Applications for reinstatement are to be made to the Office of the Cashier.

An auditor pays all fees chargeable to the student registered for credit except the late-registration fee.

WITHDRAWALS AND REFUNDS

Application for withdrawal from the University or for change in class schedule must be made in person or in writing to the Dean. Notification to an instructor is not an acceptable notice.

In authorized withdrawals and changes in schedules, financial adjustments will be made as follows:

Fall Term.—Withdrawal dated on or before October 31, cancellation of two-thirds of tuition charges; withdrawal dated on or before Novem-

ber 30, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to November 30.

Spring Term.—Withdrawal dated on or before February 28, cancellation of two-thirds of tuition charges; withdrawal dated on or before March 31, cancellation of one-third of tuition charges. No refund or reduction will be allowed on a withdrawal dated subsequent to March 31.

In no case will a refund be made of the first third of the total tuition charges unless the registration is in advance and the course is dropped before the regular registration day. In this case a withdrawal fee of \$5 is charged and tuition fees refunded. In no case will tuition be reduced or refunded because of nonattendance upon classes.

Payment applies only to the term for which a registration charge is incurred and in no case will this payment be credited to another term.

Any student in chemistry who fails to check out of the laboratory on or before the date set by the instructor, unless excused by the instructor, will be charged a checkout fee in the amount of \$2. A student who drops a course before the end of the term must check out of the laboratory at the next regular laboratory period.

Any student enrolled in the Air Force ROTC who fails to turn in uniforms, equipment, and textbooks, on separation from the Corps, will be charged the value of the missing items.

Authorization to withdraw and certification for work done will not be given a student who has not a clear financial record.

All charges for courses dropped without the approval of the Dean must be met by the student. Reporting the dropping of a course to an instructor does not effect its discontinuance.

RIGHT TO DISMISS STUDENTS

The right is reserved by the University to dismiss or exclude any student from the University, or from any class or classes, whenever, in the interest of the student or the University, the University Administration deems it advisable to do so.

RIGHT TO CHANGE RULES

The University and its various colleges, schools, and divisions reserve the right to modify or change requirements, rules, and fees. Such regulations shall go into force whenever the proper authorities may determine.

COURSES OF INSTRUCTION

The University reserves the right to withdraw any course announced.

EXPLANATION OF COURSE NUMBERS

An odd number preceding the name of the course indicates that the course is offered in the fall term; and an even number, that it is offered in the spring term. The letter "x" following an odd course number (e.g., 295x) indicates that the course, normally offered in the fall term, is given in the spring term. The letter "x" following an even course number indicates that the course, normally offered in the spring term, is given in the fall term.

First-group courses.—Courses numbered from 1 to 100 are planned for students in the freshman and sophomore years. With the approval of the Adviser and the Dean, they may also be taken by juniors and seniors. In certain instances, they may be taken by graduate students to make up undergraduate deficiencies or as prerequisite to advanced courses, but they may not be credited toward a higher degree.

Second-group courses.—Courses numbered from 101 to 200 are planned for students in the junior and senior years. They may be credited toward higher degrees only when registration for graduate credit has been approved at the beginning of the course by the Dean of the School of Education and by the officer of instruction concerned, and when the completion of additional work has been certified by the officer of instruction.

Third-group courses.—Courses numbered from 201 to 300 are planned primarily for graduate students. They are open, with the approval of the officer of instruction, to qualified seniors.

INDICATION OF THE AMOUNT OF CREDIT

The number of credit hours given for the satisfactory completion of a course is indicated in parentheses after the name of the course. Thus, a year course giving three hours of credit each term is marked (3-3), and a term course giving three hours of credit is marked (3).

DEPARTMENT OF EDUCATION

Courses offered by the Department of Education are of two types: those designed for the preservice education of candidates and those planned for the inservice education of teachers.

Preservice courses devote two fifty-minute periods a week to lecture and discussion supplemented by a minimum of two hours a week of related field work. A clinical approach to the study of educational

problems is used, lectures and discussions revolving around observed practices.

Inservice courses usually meet only once a week for a two-hour period. Class work is supplemented by extensive reading assignments, the preparation of reports, and field work. A student enrolled in one of these courses should plan to devote not less than seven hours a week, exclusive of class time, to the work of the course.

Ample opportunity is provided to study teaching or administrative problems of special interest. To enable students to consult with instructors regarding individual problems, a conference hour is scheduled immediately before or after the class period.

Only the courses designed to provide professional information and skills are listed below. For courses needed for general education or teaching-field preparation, see the general catalogue. In addition to courses offered in the Department of Education a number of professional courses for teachers are offered in the departments of Psychology, Speech, and Statistics. These are listed below together with courses offered by the Department of Education.

Whenever possible, the exact hour of class meeting is stated. Hours for classes not yet scheduled may be found in the Schedule of Classes for the term concerned.

FIRST GROUP

Education A *Reading Clinic* Coleman and Staff
Diagnosis of reading difficulties; individual or group lessons without academic credit. Fee: for diagnosis, \$25; for individual lesson, \$3.50; for group lesson \$2.50; material fee, \$3.

Psychology 22 *Introduction to Educational Psychology* (3) Faith
Consideration of individual and group differences, adjustments, and the psychology of learning in relation to education and training. Morning.

Psychology 22x, same as 22, offered fall term. Tues. and Thurs., 6-10 to 7:25 P.M.

Psychology 29 *Child Psychology* (3) Tanck
A genetic approach to the study of the child. Special emphasis is placed on the socialization process, learning, and the child's view of the world. Tues. and Thurs., 6:10 to 7:25 P.M.

Psychology 29x, same as 29, offered spring term. Morning.

Statistics 53 *Introduction to Statistics in Psychology and Education* (3) The Staff

Sources of data, tabulation, charts and graphs, averages, dispersion, quartiles and percentiles, raw scores and derived scores, profiles, norms and their use, frequency distributions, intelligence and other quotients, reliability and validity of tests, normal curve, correlation, elementary sampling, statistical error, limitations of statistics. Prerequisite: one entrance unit in algebra. Labor-

atory fee, \$6. Lecture—section A: Tues. and Thurs., 10:10 A.M.; section B: Mon. and Wed., 7:35 to 8:25 P.M.; laboratory—section M: Thurs., 2:10 to 3:50 P.M.; section N: Tues., 4:10 to 5:50 P.M.; section P: Mon., 8:30 to 10:10 P.M.

Statistics 53x, same as 53, offered spring term. Evening.

SECOND GROUP

Statistics 105 *Statistics in Psychology and Education* The Staff

(3)

Advanced study of correlation and frequency analysis, sampling theory, factor analysis, and applications to specific problems utilizing case method of study insofar as possible. Original work is required of each student.

Prerequisite: Statistics 53. Laboratory fee, \$6. Lecture—Tues. and Thurs., 1:10 P.M.; laboratory—Tues., 2:10 to 3:50 P.M.

Education 109-10 *Learning and Teaching* (3-3) Ruffner

For the general student as well as the prospective teacher. Fall term: nature of learning approached through the study of actual classroom situations. Spring term: nature of teaching approached through observation of typical classroom situations. Section A: lecture—Wed. and Fri., 2:10 P.M., conference hour—Mon., 2:10 P.M.; section B: lecture—Wed. and Fri., 6:10 P.M., conference hour—Mon., 6:10 P.M.; field work (2 hours) to be arranged.

Education 111-12 *Elementary School Curriculum* (3-3) Grau

For seniors in the elementary school curriculum. Principles of elementary education, including general classroom procedures and common teaching skills. Fall term: special emphasis upon materials and methods in language arts, including reading, writing, spelling and speech. Spring term: special emphasis upon materials and methods in social studies, science, and arithmetic. Prerequisite: Education 109-10 and 121-22. Mon. and Wed., 4:30-5:45 P.M.

Education 113 *Elementary School Arts* (3) Nowlin

For juniors in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 29. Tues., 7:35-9:35 P.M.; field work to be arranged.

Education 114 *Elementary School Music* (3) Reed

For juniors in the elementary school curriculum. Materials and methods. Prerequisite: Psychology 1 and 29. Thurs., 7:35 to 9:35 P.M.

Education 115 *Elementary School Classroom Procedures* (3)

For experienced teachers. Survey of current classroom practices with particular attention to the determination of children's needs and interests, providing for individual differences; evaluation. (Not offered in 1953-54.)

Education 116 *Elementary School Social Studies* (3)

For experienced teachers. Content and methods of teaching. (Not offered in 1953-54.)

Education 117 *Elementary School Science* (3)

For experienced teachers. Materials and methods. (Not offered in 1953-54.)

Education 121-22 *Society and the School* (3-3)

Angel

For the general student as well as the prospective teacher. Fall term: the local, national, and international roles of education; cooperation of the school with other community agencies. Spring term: organization and operation of schools; principles and functions. Section A: lecture—Tues. and Thurs., 2:10 P.M.; conference hour—Mon., 2:10 P.M.; section B: lecture—Tues. and Thurs., 6:10 P.M.; conference hour—Mon., 6:10 P.M.; field work (2 hours) to be arranged.

Psychology 121 *Educational Psychology* (3)

Faith

Advanced course in educational psychology. Open each term on the individual study plan to a limited number of students. Time to be arranged.

Education 128 *Children's Literature* (3)

Walker

For juniors in the elementary school curriculum. Exploring and evaluating the newer books for children and the children's classics, understanding the contributions of literature in child development, appreciating children's original expressions. Prerequisite: Psychology 1 and 29. Tues., 7:35 to 9:35 P.M.; field work (2 hours)—to be arranged.

Psychology 129 *Introduction to Counseling and Guidance* (3)

Drees

A survey of the basic principles, techniques, and procedures as applied to vocational, educational, and personal counseling. Thurs., 6:10 to 8:50 P.M.

Education 131 *Common Teaching Skills* (3)

Root

For seniors in the secondary school curriculum. Course, unit, and lesson planning; practical techniques used in connection with motivation, the assignment, group procedures, directing study, individual differences, evaluation, clerical routines, discipline, the homeroom, activity sponsorship, public relations. Prerequisite: Education 109-10 and 121-22. Tues. and Thurs., 12:45-2:00 P.M.

Psychology 131 *Psychological Tests* (3)

Tanck

A survey of psychological tests and their more common uses in business, industry, government, law, medicine, and education. Material fee, \$5. Tues. and Thurs., 11:10 A.M. to 12:25 P.M.

Psychology 131X, same as 131, offered spring term. Evening.

† Education 133-34 *Observation and Practice Teaching* (3-3)

Root, —

For seniors in the elementary or secondary school curriculum. Education 134, practice-teaching fee, \$9 a credit hour. Admission by permission of the instructor. Prerequisite: Education 109-10 and 121-22. Time to be arranged individually.

Psychology 144 *Personnel Psychology* (3)

Mosel

The application of psychology to personnel work in education, business, industry, and government. Afternoon.

Psychology 144X, same as 144, offered fall term. Mon. and Wed., 5:45 to 7:00 P.M.

† A dagger preceding the number of a year course indicates that the course may not be entered in the second term and that credit will not be given until the work of both terms has been completed.

SPECIAL METHODS COURSES*

To be elected in the senior year after substantial preparation in the teaching fields concerned, by students in the secondary school curriculum. Course requirements and hours of credit vary with license requirements. Practices of successful teachers are studied and actual teaching content as found in current texts and courses of study is reviewed.

Education 136 *Teaching English* (2 to 4) Lumsden
Prerequisite*: Eighteen credit hours of English. Tues., 7:35 to 9:35 P.M.; field work (2 hours) to be arranged.

Education 138 *Teaching Social Studies* (2 to 4) Root
Prerequisite*: Twenty-four credit hours of social studies. Mon., 7:10 to 9:10 P.M.; field work (2 hours) to be arranged.

Education 140 *Teaching Mathematics* (3) Weida
Prerequisite*: Mathematics through calculus. Tues., 5:10 to 7:00 P.M.

Education 141-42 *Teaching Art* (3-3) Goodwin
Prerequisite*: Thirty credit hours of art. (Not offered in 1953-54.)

Education 144 *Teaching Science* (2 to 4) Rumbough
Prerequisite*: Twenty-four to forty credit hours of science. Thurs., 5:10 to 7:00 P.M.; field work (2 hours) to be arranged.

Education 146 *Teaching Foreign Languages* (2 to 4) Doyle, Keating
Prerequisite*: Eighteen credit hours of one foreign language. Tues., 5:10 to 7:00 P.M.

Education 148 *Teaching Home Economics* (2) Kirkpatrick
Prerequisite*: Thirty credit hours of Home Economics. Time to be arranged.

Education 150 *Teaching Business Subjects* (2) Shott
Prerequisite*: Thirty credit hours of business education. Time to be arranged.

Speech 175-76 *Speech Correction* (3-3) Pettit
A study of the causes of the disorders of speech with emphasis on methods in diagnosis and treatment of defective speech. Admission by permission of the instructor. Laboratory fee, \$5 a term. Speech 175: Tues. and Thurs., 7:35 to 8:50 P.M.

THIRD GROUP†

Education 205-6 *The Curriculum*‡ (3) Bish
For experienced teachers. Fall term: curriculum foundations and issues; comparison of curriculum patterns. Spring term: principles and procedures in curriculum development; group consideration of student problems. Sat., 11:10 A.M. to 1:00 P.M.

* Prerequisite to all special methods courses: Education 109-10, 121-22, and 131. Additional prerequisites are stated under each course.

† Prerequisite from an accredited institution is prerequisite to all third group courses.

‡ Prerequisite: adequate professional preparation.

Education 207 Curriculum Materials § (3)

For experienced teachers. The study and comparison of courses of study, resource units, classroom teaching aids, and inexpensive materials; direct application to student's own situations. (Not offered in 1953-54.)

Education 209-10 Child Growth and Development § (3-3)

Basic factors in human growth and development and their relation to learning and teaching. Related practical experience in studying children; class analyses of procedures and results. Fri., 7:12 to 9:10 P.M.

Education 212 Evaluation in Education § (3)

Ruffner

Concept of evaluation, relationship between evaluation of ends and means, steps involved in the evaluation of learning outcomes. As the course progresses each student develops solutions for evaluation problems related to his work situation. Thurs., 7:35 to 9:35 P.M.

Education 213-14 History of Education (3-3)

Jarman

Fall term: the European backgrounds of American education. Spring term: the evolution of the American school system. Tues., 7:35 to 9:35 P.M.

Education 215 Education of the Exceptional § (3)

For classroom teachers. A survey of current problems in the education and guidance of exceptional pupils. Nature and needs of those physically, mentally, or emotionally handicapped; needs of the gifted. Resources for help in correction, diagnoses, therapy, education, and guidance. (Not offered in 1953-54.)

Education 217-18 Contemporary Problems in

Jarman

Education § (3-3)

Fall term: designed to help students formulate a personal philosophy of education. Spring term: social foundations of education—a study of the forces that shape the policies and offerings of the school. Mon., 7:10 to 9:10 P.M.

Education 219 Recent Developments in Elementary

Welshans

Education § (3)

For experienced teachers. New areas of emphasis, changing techniques of working with children, curriculum trends, review of recent literature. (Not offered in 1953-54.)

Education 221-22 Early Childhood Education § (3-3)

For experienced teachers. Fall term: nursery school and kindergarten education. Spring term: education in the primary grades. (Not offered in 1953-54.)

Psychology 223 Seminar: Learning § (3)

Fox

Covers theories of learning. Wed., 6:10 to 8:00 P.M.

Education 223-24 Reading Problems § (3-3)

Coleman

For experienced teachers. A clinical approach to reading difficulties on elementary and secondary school levels. Demonstrations and observations, with clinic cases. Sat., 9:10 to 11:00 A.M., conference hour—11:10 A.M.

§ Prerequisite: adequate professional preparation.

Education 225 Elementary School Reading (3) Coleman
For experienced teachers. Developmental and remedial approaches to reading problems. Demonstrations of diagnostic and corrective techniques used in the Reading Clinic. (Not offered in 1953-54.)

Psychology 225 Seminar: Mental Hygiene (3) Hunt
A survey of the recent literature in social psychology and anthropology as they relate to the impact of society on the mental hygiene of the individual. Individual mental health problems are viewed in terms of the social context in which they occur and are treated. Tues., 8:10 to 10:00 P.M.

Education 227-28 Elementary Education § (3-3) Hansen
For experienced teachers. Fall term: elementary school programs, objectives, common characteristics, and major issues. Spring term: current methods and materials in teaching the several instructional areas and the co-curriculum. Sat., 9:10 to 11:00 A.M.

Psychology 227x Seminar: Counseling and Guidance (3) Dreese
Recent developments and current problems in vocational, educational, and personal guidance in various types of agencies with particular reference to education. Prerequisite: educational or psychological measurements and Psychology 129 or the equivalent. Evening.

Psychology 228 Seminar: Techniques of Counseling (3) Dreese
Specific types of vocational, educational, and personal counseling problems approached through the case method. Prerequisite: recent previous course in counseling and guidance and familiarity with individual analysis methods. Evening.

Psychology 229x Seminar: Occupational and Educational Information (3) Faith
Designed to acquaint vocational and educational counselors with the basic occupational and educational information necessary in counseling. Sources of data and techniques of collecting, analyzing, and disseminating for purposes of guidance. Evening.

Education 229 Administration of Elementary Education § (3) Barnes
For experienced teachers and administrators, with three years of successful teaching in elementary schools. The principal as a school and community leader. Problems of supervision, curriculum development, parent relations, pupil guidance, and management. Thurs., 7:35 to 9:35 P.M.

Education 231 Secondary School Classroom Procedures § (3) Bish
Survey of current classroom practices with particular attention to selected topics such as teacher-pupil planning, group procedures, pupil security, initiatory and culminating activities, individual and group evaluation techniques, teaching aids, etc.; review of recent literature. Tues., 7:35 to 9:35 P.M.

Psychology 231 Test Construction (3) Hunt
The principles underlying test construction; statistical techniques in the construction, evaluation, and standardization of psychological, educational,

1 Prerequisite: adequate professional preparation.

and vocational tests. Prerequisite: a course in tests and measurements and a course in statistics. Mon., 6:10 to 8:00 P.M.

Psychology 232 *Research: Test Construction* (3) Hunt
Individual projects in construction and evaluation of psychological, educational, or vocational tests. Prerequisite: Psychology 231. Open each term on an individual study plan to a small number of students by permission of the instructor. Time to be arranged.

Education 233 *Audio-visual Education* § (3) J. Johnson
Selection and use of audio-visual aids; management of materials and equipment. Material fee, \$5. Lecture—Sat., 9:10 A.M. to 11:00 A.M. Laboratory—Sat., 11:10 A.M. to 1:00 P.M.

Psychology 233 *Individual Psychological Testing* (3) Tanck
Instruction and practice in giving the Binet Test and the Wechsler-Bellevue Test. Emphasis is placed on testing children and adolescents. Prerequisite: an elementary course in tests and measurements. Material fee, \$5. Fri., 4:10 to 6:00 P.M.

Psychology 233x, same as 233, offered spring term. Afternoon.

Education 239 *Teaching the Core Curriculum* § (3) Bish
An examination and study of classroom teaching procedures appropriate to the core program. (Not offered in 1953-54.)

Education 243 *Human Relations in the Classroom* (3)
Principles and practices involved in interpersonal relationships between learner and teacher and among learners. (Not offered in 1953-54.)

Education 247-48 *Vocational Education* § Ruffner, H. Johnson
(3-3)
Fall term: development in the United States, current concepts, agencies involved, problems and trends. Spring term: learning and teaching activities, curriculum content, administration of vocational programs. (Not offered in 1953-54.)

Education 251 *Guidance in Secondary Schools* § (3) Brougher
Scope; needs; organization of the program; services to students, the instructional staff, and the administration; personnel needed for the program. Registration for this course must be approved by the Dean. Wed., 7:10 to 9:10 P.M.

Education 254 *The Junior High School* § (3) Bish
Purposes, organization, core programs, guidance, developing course of study, extra-classroom activities. (Not offered in 1953-54.)

Education 255-56 *Secondary Education* § (3-3) Root
Fall term: current proposals for the reorganization of secondary education. Spring term: current problems in each of the subject-matter fields. Sat., 11:10 A.M. to 1:00 P.M.

§ Prerequisite: adequate professional preparation

Education 259-60 *Secondary School Management* * (3-3) Fox, H. Johnson

For experienced teachers and administrators, with three years of successful teaching in secondary schools. Management planning, execution, and control; criteria of good management; construction of the master schedule; leadership problems incident to the development of new policies and programs. Five meetings, Wed., 7:10 to 9:10 P.M.; five meetings Wed., 4:10 to 9:10 P.M.

Education 263-64 *Employee Training* (3-3) Root

Fall term: nature and purposes, organization and administration of programs—orientation, executive, supervisory, apprentice, clerical skills; training media and techniques; coordination with other management functions. Spring term: current practices, operating policies, and programs of selected organizations. Prerequisite: adequate professional preparation or two years of experience in employee training. Thurs., 7:35 to 9:35 P.M.

Education 271 *School Administration* * (3) Fox, Lang

A survey course for teachers and prospective administrators. Education and world affairs, national agencies, role of the state, local administration, school finance, legal controls, school plant, public support, democratic administrative procedures, improving teaching conditions. Sat., 9:10 to 11:00 A.M.

Education 272 *The Teacher and School Supervision* * (3) Fox, Lang

Nature, organization, human relationships, and techniques. Sat., 9:10 to 11:00 A.M.

Education 273-74 *Administration of a School System* (3-3)

A comprehensive survey of the management problems of a beginning superintendent; does not anticipate previous experience as a superintendent. Five years of successful experience as teacher and principal are required. (Not offered in 1953-54.)

Education 275 *School Finance* * (3)

Educational financial theory, practice, and control, including methods of financing. (Not offered in 1953-54.)

Education 276 *Seminar: Public Relations in School Administration* * (3) Root

Purposes, gathering materials, disseminating agencies, publicity media, public participation in policy-making. (Not offered in 1953-54.)

Education 278 *School Law* * (3) Remmlein

Sources and scope of school law; legal rights and responsibilities of teachers, pupils, and taxpayers. Other legal problems of major interest to the group. Fri., 7:10 to 9:00 P.M.

Education 279-80 *Adult Education* * (3-3) Ruffner

Fall term: current concepts and objectives, agencies involved, programs on all levels—international through community. Spring term: the adult as a learner, the teacher of adults, learning-teaching activities, administration of adult education programs. Mon., 7:10 to 9:10 P.M.

* Prerequisite: adequate professional preparation.

- Education 281 *Group Procedures in Education* * (3) Ruffner
Theory, practice, evaluation, and application to all educational levels. Thurs. 7:35 to 9:35 P.M.
- Education 285 *Extra-classroom Activities* * (3) Root
Nature and purposes of selected activities—homeroom, clubs, assemblies, school publications, student council, interscholastic contests; particular attention to sponsorship, participation, finance, and evaluation. (Not offered in 1953-54.)
- Education 287-88 *Clinical Study of Reading Problems* * Coleman
(3-3)
For advanced students. Diagnostic work under supervision in the Reading Clinic. Each student is expected to diagnose and treat a pupil who is retarded in reading. Case studies are presented and criticized. Prerequisite: Education 223-24. Sat., 11:10 A.M. to 1:00 P.M.
- Education 289-90 *Supervisory Problems in Reading* Coleman
(3-3)
For experienced teachers, principals, and supervisors. Considers the problems involved in planning, reorganizing, and improving the total reading program. Prerequisite: Education 223-24. 1954-55 and alternate years.
- Education 291x *Planning the School Plant* (3) Hamon
Selection of site; evaluation of existing buildings; utilization of present facilities; adaptation to curricular needs; building, operation, and maintenance problems. (Not offered in 1953-54.)
- Education 293-94 *Research* (3-3) The Staff
Individual research under the guidance of a member of the Staff. Program and conferences arranged with an instructor.
- Education 295 *Educational Research Methods and Procedures* (3) Fox
Required of all Master of Arts candidates following Plan 2. Knowledge of elementary statistics required. Tues. and Thurs., 6:10 P.M.
Education 295x, same as 295, offered spring term. Fri., 5:10 to 7:00 P.M.
- Education 297 *Reading in Education* The Staff
To assist those preparing for the comprehensive examination. No credit toward degree requirements. Tuition fee: \$15. Wed., 5:10 P.M.
Education 297x, same as 297, offered spring term. Wed., 5:10 P.M.
- Education 299-300 *Thesis* (3-3) The Staff
Required of all Master of Arts candidates following Plan 2. Time to be arranged.

DEPARTMENTS OF PHYSICAL EDUCATION

The following courses are offered by the Department of Physical Education for Men and the Department of Physical Education for Women. Whenever possible the departments offer lecture courses jointly.

* Prerequisite: adequate professional preparation.

FIRST GROUP

- 43-44 *Techniques of Physical Education Motor Activities (2-2)* The Staff
 Fundamental skills, rules, and organization. Locker and towel fee,* \$3 a term. Section A (women): Mon. and Wed., 1:10 to 3:00 P.M.; section B (men): Tues. and Thurs., 1:10 to 3:00 P.M.
- 45-46 *Methods and Materials for Teaching Individual and Dual Sports in Secondary Schools (2-2)* Atwell, Craig, Hanken, Krupa
 Tennis, golf, archery, swimming, wrestling, badminton, bowling. Locker and towel fee,* \$3 a term. Section A (women): Mon. and Wed., 1:10 to 3:00 P.M.; section B (men): Tues. and Thurs., 1:10 to 3:00 P.M.
- 47 *Introduction to Physical Education (2)* Krupa
 An orientation course presenting the problems of physical education, vocational analysis, scientific foundations, and scope of field. Mon. and Wed., 2:10 P.M.
- 48 *Introduction to Recreation (2)* Hanken
 The role of recreation in modern living; current practices in community recreation work; standards of training, experience, and salary; types of leadership needed. Time to be arranged.
- 49 *Human Anatomy (3)* Lawrence
 The structure of the human body. Basic course for physical education majors. Also open to both men and women not majoring in physical education. Prerequisite: Biology 1-2 or Zoology 1-2. Mon., Wed., and Fri., 9:10 A.M.
- 50 *Kinesiology (3)* Lawrence
 A study of the anatomical mechanism of movement, analysis of the action of muscles in physical education activities. Prerequisite: an approved course in anatomy. Morning.
- 58 *First Aid and Care of Athletic Injuries (2)* De Angelis, Lawrence
 Prevention and emergency care of injuries of all types, with special reference to first aid, bandaging, and massage. A practical course. Prerequisite: Biology 1-2 or Zoology 1-2. Afternoon.

SECOND GROUP

- 101 *Physical Education in the Elementary School (3)* Atwell, Burtner
 Physical growth and development of the child and adolescent. Survey of age characteristics and organization of physical education activities for the various age levels in elementary school, playground, and settlement house programs. Methods and materials of tumbling, games, rhythms, and self-testing activities. Lecture—Thurs., 5:10 P.M.; laboratory—Mon., 7:10 to 9:00 P.M.

* The locker and towel fee is required for registration in one or more of the activity courses.

- 103 *History and Principles of Physical Education* (3) Atwell, Krupa
Survey of history as it relates to contemporary physical education. Study of aims, objectives, and philosophy of physical education. Tues. and Thurs., 8:45 to 10:00 A.M.
- 105-6 *Corrective Physical Education and Physical Examinations* (3-3) Lawrence
Cause and correction of faulty body mechanics, physical examination methods for the diagnosis of postural defects, prescription of exercises and program adaptation. Prerequisite: Biology 1-2 or Zoology 1-2. Mon., Wed., and Fri., 11:10 A.M.
- 107 *Techniques for Teaching Recreational Dance* (1) Burtner
Methods and materials for teaching the country and social dances of America and the folk dances of other countries to secondary-school age and adult groups. Square-dance calling is included. Tues. and Thurs., 12:10 P.M.
- 109-10 *Leadership Organization in the Intramural Program* (2-2) De Angelis
Principles of administration, organization, and supervision of intramural activities in the physical education program of the junior high school, senior high school, and college. Tues. and Thurs., 11:10 A.M.
- 113-14 *Methods and Practice in Teaching Physical Education Activities* (2 to 4-2 to 4) The Staff
Principles and methods applied to learning and teaching physical education activities. Supervised laboratory. Mon. and Wed., 1:10 to 3:00 P.M.
- 115-16 *Methods and Materials for Teaching Team Sports in Secondary Schools* (2 to 4-2 to 4) The Staff
Section A (women): field hockey, basketball, softball, soccer, speedball, volleyball. Mon. and Wed., 1:10 to 3:00 P.M. Section B (men): football, basketball, baseball, track and field. Tues. and Thurs., 10:10 to 12:00 A.M. Locker and towel fee,* \$3 a term.
- 118 *Methods of Teaching Modern Dance* (2 to 4) Burtner
Techniques for the teaching of movement as a medium of expression. Practical work in body technique, composition, and the analysis of accompaniment for dance including instrumental, voice, and percussion. Application is made to both secondary-school and adult age levels. Afternoon.
- 121 *School and Community Health Programs* (3) Krupa
Health services, healthful environment, health instruction, sources of material for general health knowledge. Prerequisite: Biology 1-2 or Zoology 1-2. Mon., Wed., and Fri., 10:10 A.M.

* The locker and towel fee is required for registration in one or more of the activity courses.

- 122 *Methods and Materials of Health Education* (3) Atwell
Organization and presentation of health materials for each age level. Prerequisite: Biology 1-2 or Zoology 1-2. Morning.
- 131 *Tests and Measurements in Physical Education* (3) Krupa
Critical survey of tests in physical activities, methods of test construction, elementary statistics. Time to be arranged.
- 132 *Camp Leadership* (1) Atwell
Survey course in camp counseling. Afternoon.
- 133-34 *Observation and Practice Teaching* (3-3) Atwell, Myers
Assignments are made to schools in Washington and the vicinity. Practice teaching fee, \$9 a credit hour. Time to be arranged.
- 136 *Survey of Dance History and Dance Forms* (3) Burtner
The development of dance from primitive ritual to present day recreational and art forms of the dance. Includes ethnologic dance, practice and discussion of fundamental movement techniques and composition. Evening.
- 138 *Organization and Administration of Physical Education* (3) Atwell, Myers
Organization and administration of physical education programs in elementary and secondary schools and in colleges. Study of plants, fields, equipment, and programs. Morning.
- 151-52 *Recreational Leadership Activities* Christiansen
(1 to 3-1 to 3)
Fall term: basic skills for the pre-school and school-age child. Laboratory practice in crafts, music, dramatics, physical and social activities. Spring term: basic skills for the teen-age and adult. Arts and crafts, dramatics, physical and social activities. 1954-55 and alternate years, evening.
- 161 *Community Organization for Recreation* Christiansen
(3)
Resources, principles, and methods in organizing community recreation services. 1953-54 and alternate years. Wed., 7:10 to 9:10 P.M.
- 162 *Administration of Community Recreation Programs* (3) Christiansen
Factors and problems in administering recreation including surveys, legislation, program, area, facilities, leadership, finance, and public relations. 1953-54 and alternate years, evening.

THIRD GROUP

- 211 *Problems in Physical Education* (3) Anderson
For experienced teachers. Organization, supervision, and curriculum problems growing out of current issues; program planning policies; competition. 1954-55 and alternate years, evening.

- 220 *Problems in Health Education* (3)
Health needs; policies and program planning; use of community resources; promising practices in the field. 1954-55 and alternate years, evening.
- 231 *Evaluation in Physical Education* (3) Anderson
Planning the evaluation program; review of outcomes; analysis of tests and standards; administration and interpretation of tests; guidance. 1953-54 and alternate years. Thurs., 7:35 to 9:35 P.M.
- 240 *Physical Education for the Atypical* (3)
Adaptations of activities to meet the special needs of students with physical disabilities resulting from such conditions as postural deviations, cardiac irregularities, operations, and poliomyelitis. 1953-54 and alternate years, evening.

SCHEDULE OF LATE AFTERNOON, EVENING, AND SATURDAY CLASSES

FALL TERM 1953-54

- Monday Evening 6:10 to 8:00
Psychology 231 Test Construction
- Monday Evening 7:10 to 9:10
Education 217 Contemporary Problems in Education
Education 279 Adult Education
Physical Education 101 Physical Education in the Elementary School (laboratory)
- Tuesday Evening 7:35 to 9:35
Education 113 Elementary School Art
Education 213 History of Education
Education 231 Secondary School Classroom Procedures
- Tuesday Evening 8:10 to 10:00
Psychology 225 Seminar: Mental Hygiene
- Wednesday Afternoon 5:10
Education 297 Reading in Education
- Wednesday Evening 6:10 to 8:00
Psychology 223 Seminar: Learning
- Wednesday Evening 7:10 to 9:10
Education 251 Guidance in Secondary Schools
Education 259 Secondary School Management
Physical Education 161 Community Organization for Recreation
- Thursday Afternoon 5:10
Physical Education 101 Physical Education in the Elementary School (lecture)
- Thursday Evening 6:10 to 8:50
Psychology 129 Introduction to Counseling and Guidance

Thursday Evening 7:35 to 9:35
Education 229 Administration in Elementary Education
Education 263 Employee Training
Education 281 Group Procedures in Education
Physical Education 231 Evaluation in Physical Education

Friday Afternoon 4:10 to 6:00
Psychology 233 Individual Psychological Testing

Friday Evening 7:10 to 9:10
Education 209 Child Growth and Development

Saturday Morning 9:10 to 11:00
Education 223 Reading Problems
Education 227 Elementary Education
Education 233 Audio-visual Education
Education 271 School Administration

Saturday Morning 11:10 to 1:00
Education 205 The Curriculum
Education 255 Secondary Education
Education 287 Clinical Study of Reading Problems

SPRING TERM 1953-54

Monday Evening 7:10 to 9:10
Education 138 Teaching Social Studies
Education 218 Contemporary Problems in Education
Education 280 Adult Education

Tuesday Afternoon 5:10 to 7:00
Education 140 Teaching Mathematics
Education 146 Teaching Foreign Languages

Tuesday Evening 7:35 to 9:35
Education 128 Children's Literature
Education 136 Teaching English
Education 214 History of Education

Wednesday Afternoon 5:10
Education 297x Reading in Education

Wednesday Evening 7:10 to 9:10
Education 260 Secondary School Management
Physical Education 162 Administration of Community Recreation Programs

Thursday Afternoon 5:10 to 7:00
Education 144 Teaching Science

Thursday Evening 7:35 to 9:35
Education 114 Elementary School Music
Education 212 Evaluation in Education
Education 264 Employee Training

Friday Evening 7:10 to 9:10
Education 210 Child Growth and Development
Education 278 School Law

Saturday Morning 9:10 to 11:00

Education 224 Reading Problems

Education 228 Elementary Education

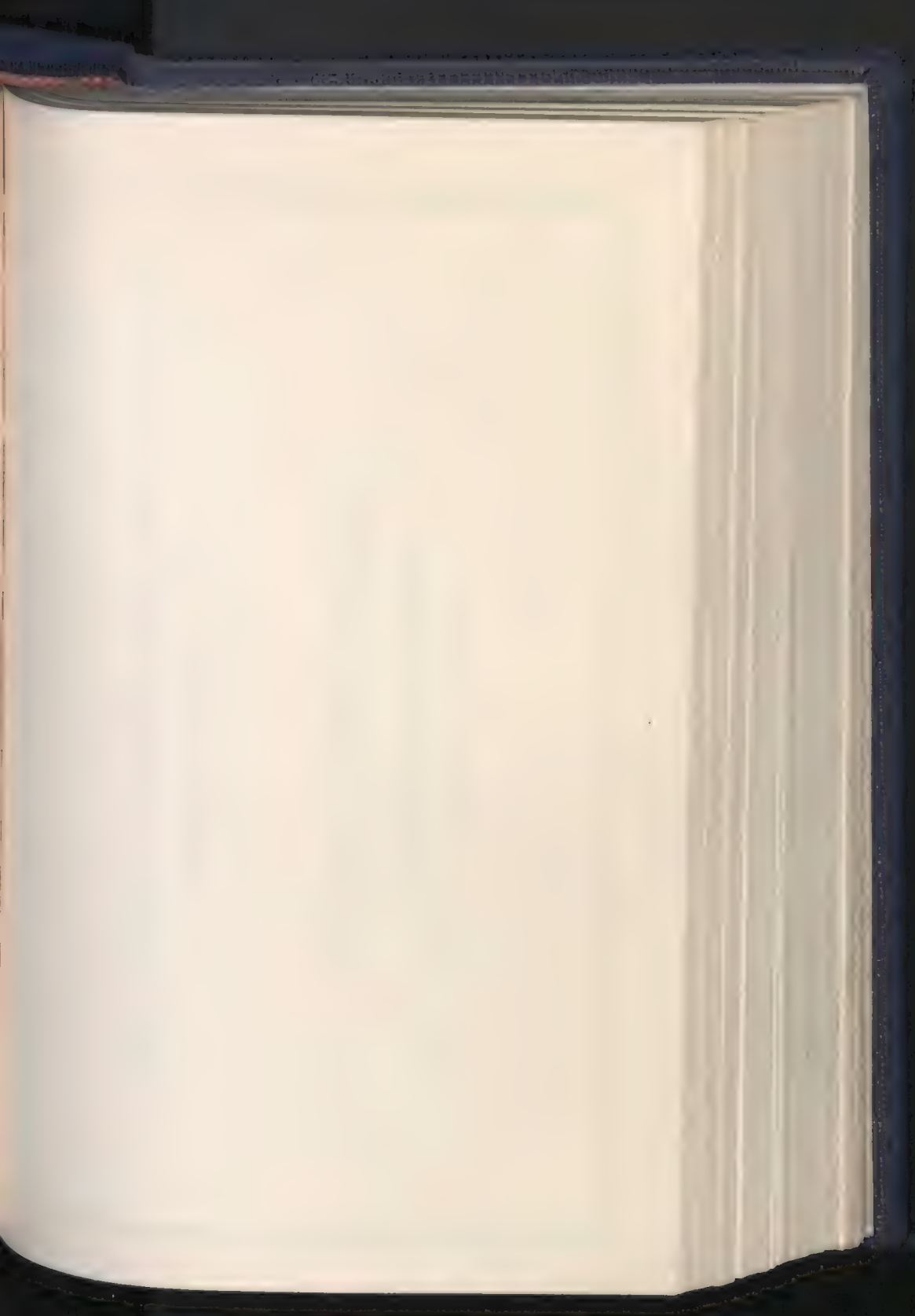
Education 272 The Teacher and School Supervision

Saturday Morning 11:10 to 1:00

Education 206 The Curriculum

Education 256 Secondary Education

Education 288 Clinical Study of Reading Problems



THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

Report of the Treasurer
FOR THE YEAR ENDED
AUGUST 31, 1953

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LETTER OF TRANSMITTAL

November 30, 1953

TO THE PRESIDENT AND THE BOARD OF TRUSTEES
THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

GENTLEMEN:

I am submitting herewith the Report of the Treasurer of The George Washington University for the fiscal year ended August 31, 1953. This report is a review of the budget operations for the year and is based on the budget approved by the Board of Trustees of the University.

The accounts of the University are kept and its financial reports set up as far as practicable in conformity with the recommendations of the National Committee on Standard Reports for Institutions of Higher Education. Under that plan the funds of the University are classified in various fund groups, and the accounts and financial statements are set up to segregate clearly the assets and liabilities of each of these groups as indicated in the balance sheet, Exhibit A.

R. G. Rankin & Co. have examined the accounts of the University for the past year, and their certificate is submitted herewith.

A condensed summary of the principal facts in the report is presented below and on succeeding pages, followed by detailed Exhibits and Schedules.

Respectfully submitted,
HENRY W. HERZOG
Treasurer

CURRENT FUNDS—UNRESTRICTED

These Funds represent assets which are available for immediate use in the current operation of the University.

Current Income for the Year (Exhibit B and Schedule 1) 9,905,826.73
 Current Expense for the Year (Exhibit B and Schedule 1) 9,582,840.86
 Excess of Current Income over Current Expense (Exhibit B) 322,985.87

The latter amount was added to Current Funds Surplus. Surplus at the end of the year amounted to \$416,434.98 (Exhibit B) of which \$74,895.32 is Hospital working funds. During the year there was transferred from Surplus to Net Investment in Plant \$187,963.04 for the purchase of land and buildings, \$46,934.30 for the purchase of equipment, and \$10,876.71 for the reduction of trust notes payable.

The Hospital working funds balance of \$74,895.32 reflects the net result of the operation of the Hospital since September 1, 1947, the beginning of the fiscal year in which the new Hospital was opened. This amount represents the net operating income of the Hospital, and the provision made for depreciation of building and equipment which is not being funded, less charges for pre-opening and moving expense, and for purchases of new Hospital property, cancer clinic site, and equipment and improvements to plant in excess of gifts received for those purposes.

Notes Payable of \$500,000.00 were paid in full September 25, 1953.

Accounts Receivable in the amount of \$972,392.16 include \$588,236.62 due from research contracts, and \$492,179.69 due the Hospital (Schedule 3). Of this latter amount \$262,522.97 is due from patients still in the Hospital, and from Group Hospitalization and other agencies under contracts. The remainder of \$229,656.72 represents past due accounts against which a reserve of \$135,000.00 has been provided to cover possible collection losses.

Prepaid Expense of \$261,634.85 includes inventories of \$136,186.34 at the University and \$125,448.51 at the Hospital (Schedule 3).

CURRENT FUNDS—RESTRICTED

Research grants, investment income, gifts, and agency funds comprise these funds which consist of current expendable assets, limited as to disposition (Exhibit C and Schedules 10, 10A, 10B, 10C).

During the year restricted gifts and grants for use as specified amounted to \$3,002,755.07 (page 90). Restricted endowments earned \$146,293.30. Unexpended Restricted and Agency Funds totaled \$469,837.12 (Exhibit C).

LOAN FUNDS

For the assistance of students seeking financial aid, loan funds have been established by the University and other organizations (Schedule 4). Loans are made at a low rate of interest and when repaid the interest is added to the principal of the funds.

During the year, 317 loans were made to students. Loan Funds totaled \$37,183.00.

ENDOWMENT FUNDS

The principal of all endowment funds amounted to \$3,456,418.28 (Exhibit E), an increase of \$252,087.25 (page 91). These funds are represented by assets which, under the terms of wills, deeds of gift, or under the by-laws of the University, must be held in perpetual trust for income-producing purposes. The principal amount and changes during the year of every endowment fund are recorded in Schedule 12. A description of the funds begins on page 93.

"Consolidated Endowment Funds" consisted of one hundred and nine endowments with a total value of \$2,063,091.71 (Schedule 5). The assets of these funds are combined to eliminate the possibility of partial or total loss of any fund through the failure of a specific investment, and to avoid temporary suspension of income and the carrying of uninvested small cash balances, and to give equality of treatment to all funds. Unless otherwise restricted by the donors, the assets of all new endowments are added to the assets of the Consolidated Endowment Funds.

Reserves for Protection of Investments were as follows: Consolidated Endowment Funds, \$85,861.97; Scottish Rite Fund, \$55,820.14 (Schedule 12).

Earnings of Consolidated Endowment Funds are recorded in one income account and at the end of the year are distributed to the participating funds in the proportion each fund bears to the total of the entire group. The rate of return on the investments of these funds amounted to 4.72% during the past year.

The Scottish Rite Endowment Fund earned 4.4675% net income on its investments during the year just ended.

Net income of all endowment funds for the year was \$146,293.30 (Schedule 10A—Page 3).

Pledges to the School of Medicine Endowment Fund on August 31, 1953, totaled \$199,364.00

PLANT FUNDS—UNEXPENDED

Cash and other assets for development of the physical plant comprise these funds (Schedule 7). At the end of the year the balance was \$407,717.51 (Exhibit F).

During the year \$200,000.00 was received from the United States Public Health Service and \$255,915.75 from the Washington Home for Foundlings toward the cost of construction of the cancer clinic building. Of this total sum of \$455,915.75, \$304,183.56 was expended leaving a balance of \$91,732.19 (Schedule 13).

Major alterations to Social Sciences Building D to allow for the expansion of the University Library, and for the housing of the HumRRO research project were completed at a total cost of \$266,365.58 of which \$252,373.10 was charged in the 1952-53 year.

The Reserve for Protection of Consolidated Plant Funds Investments ended the year with a balance of \$6,373.26 (Schedule 13).

PLANT FUNDS—INVESTED IN PLANT

	BALANCE August 31, 1952	Net Additions	Deductions	BALANCE August 31, 1953
EXHIBITS A, B AND C, SCHEDULES 8 AND 9				
LAND AND BUILDINGS	16,476,348.76	567,146.60		17,043,495.36
EQUIPMENT	1,977,214.05		31,619.08	1,945,594.97
TRUST NOTES PAYABLE	541,730.58	89,123.29		630,853.87
NET INVESTMENT IN PLANT	17,911,832.23	446,404.23		18,358,236.46

AUDIT CERTIFICATE

November 30, 1953

TO THE PRESIDENT AND THE BOARD OF TRUSTEES
THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, D. C.

We have examined the balance sheet of THE GEORGE WASHINGTON UNIVERSITY as of August 31, 1953, and the related statements of current income and expense, current funds surplus, and other fund transactions for the fiscal year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. It was not practicable to confirm receivables from United States Government Agencies, but we have applied other auditing procedures in verification of this asset.

In our opinion, the balance sheet and related statements of current income and expense, current funds surplus, and other fund transactions included in the accompanying REPORT OF THE TREASURER OF THE UNIVERSITY, present fairly the financial position of THE GEORGE WASHINGTON UNIVERSITY as of August 31, 1953, and the results of its operations for the fiscal year then ended, in conformity with generally accepted principles of university and college accounting applied on a basis consistent with that of the preceding year.

R. G. RANKIN & Co.
CERTIFIED PUBLIC ACCOUNTANTS

THE GEORGE WASHINGTON UNIVERSITY

BALANCE SHEET

August 31, 1953

Assets		Liabilities	
CURRENT FUNDS		CURRENT FUNDS	
UNRESTRICTED		UNRESTRICTED	
CASH.....	29,495.24	NOTES PAYABLE—Riggs National Bank. Due on or before November 29, 1953. Interest 3¼%	500,000.00
ACCOUNTS RECEIVABLE (Schedule 3).....	972,392.16	ACCOUNTS PAYABLE.....	292,953.75
PREFPAID EXPENSE (Schedule 3).....	261,634.85	DEFERRED INCOME.....	54,133.52
		SURPLUS (Exhibit B).....	416,434.98
			1,263,522.25
RESTRICTED		RESTRICTED	
CASH.....	375,507.12		
INVENTORY—GIFT SHOP.....	4,330.00		
U. S. A. BONDS			
Treasury, 2⅞%, due 9-15-53....	40,000.00		
Series G, 2½%, due 11-1-54....	50,000.00		
		PRINCIPAL OF FUNDS (Exhibit C).....	469,837.12
LOAN FUNDS		LOAN FUNDS	
CASH.....	14,713.33		
LOANS RECEIVABLE (Schedule 4).....	22,469.67		
		PRINCIPAL OF FUNDS (Exhibit D).....	37,183.00

ENDOWMENT FUNDS

CASH.....	8,128.46	
INVESTMENTS (Schedule 5).....	3,110,783.39	
	<u>3,118,911.85</u>	
FUNDS HELD IN TRUST BY OTHERS (Schedule 6).....	337,506.43	3,456,418.28
		<u>PRINCIPAL OF FUNDS (Exhibit E).....</u>
		3,456,418.28

PLANT FUNDS

UNEXPENDED		
CASH.....	119,103.87	
INVESTMENTS (Schedule 7).....	<u>488,613.64</u>	
	607,717.51	PRINCIPAL OF FUNDS (Exhibit F).....
		607,717.51
INVESTED IN PLANT		
LAND AND BUILDINGS (Schedule 8).....	17,043,495.36	
EQUIPMENT (Schedule 9).....	<u>1,945,594.97</u>	
	18,989,090.33	TRUST NOTES PAYABLE (Schedule 8A).....
		630,853.87
		<u>NET INVESTMENT (Exhibit G).....</u>
		18,358,236.46

TOTAL.....	<u>24,823,768.49</u>	<u>TOTAL.....</u>
		24,823,768.49

EXHIBIT A

SUMMARY OF CURRENT INCOME AND EXPENSE

For the Year Ended August 31, 1953

Income (Schedule 1)		
Educational and General		
Student Fees	2,719,961.44	
Investments	127,411.97	
Gifts	58,750.99	
Student Activities	84,760.56	
Miscellaneous	101,868.27	
Organized Research	2,841,869.67	
Hospital	3,517,835.54	
Auxiliary Enterprises		9,452,458.44
		<u>453,368.29</u>
		9,905,826.73
Expense (Schedule 2)		
Educational and General		
Administration and General	725,419.06	
Instruction	1,820,983.95	
Libraries	106,972.82	
Maintenance and Operation of Plant	503,150.20	
Student Activities	291,551.48	
Organized Research	2,841,869.67	
Hospital	3,374,840.38	
Auxiliary Enterprises		9,664,787.56
Student Aid		407,486.24
		<u>40,875.22</u>
		10,113,149.02
		530,308.16
		<u>9,582,840.86</u>
Less reimbursement for overhead included above		

EXCESS OF CURRENT INCOME OVER CURRENT EXPENSE (see below) 322,985.87

SUMMARY OF SURPLUS

For the Year Ended August 31, 1953

	HOSPITAL WORKING FUNDS	UNAPPRO- PRIATED	TOTAL EXHIBIT A
BALANCE AUGUST 31, 1952.....	(- 89,809.38)	380,535.69	290,726.31
ADDITIONS			
Excess of Current Income over Current Expense.....	142,995.16	179,990.71	322,985.87
Reimbursement for depreciation on Hospital Building and Equipment (Exhibit G).....	180,000.00		180,000.00
	322,995.16	179,990.71	502,985.87
DEDUCTIONS			
Deferred Charge—Hospital Equipment.....	122,844.20		122,844.20
“ Hospital Improvements.....	7,026.82		7,026.82
Transferred to Hospital Equipment Fund Women's Board Gift Shop—Exhibit F.....	1,631.93		1,631.93
Transferred to Net Investment in Plant (Exhibit G)			
Land and Buildings.....	10,572.34	177,390.70	187,963.04
Equipment.....	16,215.17	30,719.33	46,934.50
Trust Notes Curtailed.....		10,876.71	10,876.71
	158,290.46	218,986.74	377,277.20
BALANCE AUGUST 31, 1953.....	74,895.32	341,539.66	416,434.98

EXHIBIT B

SUMMARY OF RESTRICTED CURRENT FUNDS

For the Year Ended August 31, 1953

	ORGANIZED RESEARCH (Schedule 10)	INVESTMENT INCOME (Schedule 10A)	MISCELLANEOUS (Schedule 10B)	AGENCY (Schedule 10C)	TOTAL EXHIBIT A
BALANCE AUGUST 31, 1952.....	197,916.59	66,145.44	86,270.73	9,787.01	360,119.77
ADDITIONS					
Gifts, grants, receipts, deposits.....	2,899,240.06		96,917.31	41,475.40	3,037,632.77
Investment income.....		163,508.33	435.12		163,943.45
	2,899,240.06	163,508.33	97,352.43	41,475.40	3,201,576.22
DEDUCTIONS					
Salaries.....	1,582,094.31				1,582,094.31
Expense.....	1,259,775.36		1,174.05		1,260,949.41
Scholarships, fellowships.....		6,546.18	4,320.00		10,866.18
Prizes.....		1,672.10	255.00		1,927.10
Transferred to					
Exhibit G--Net Investment in Plant.....		1,080.78			1,080.78
Schedule 1--Current Income.....		127,411.97	53,593.29		181,005.26
Schedule 1--Current Income--Hospital.....		2,594.01			2,594.01
Schedule 10B--Restricted Miscellaneous Funds.....		387.12			387.12
Schedule 11--Loan Funds.....			1,350.00		1,350.00
Schedule 12--Endowment Funds.....		4,506.59			4,506.59
Schedule 13--Plant Funds.....		12,979.51			12,979.51
Withdrawals.....				32,118.60	32,118.60
	2,841,869.67	157,178.26	60,692.34	32,118.60	3,091,858.87
BALANCE AUGUST 31, 1953.....	255,286.98	72,475.51	122,930.82	19,143.81	469,837.12

SUMMARY OF LOAN FUNDS PRINCIPAL

For the Year Ended August 31, 1953

BALANCE AUGUST 31, 1952.....	34,107.23
ADDITIONS (Schedule 11)	
Gifts.....	1,609.52
Interest on loans.....	413.48
Transferred from Schedule 10B.....	<u>1,350.00</u>
	3,373.00
	<u>37,480.23</u>
DEDUCTIONS (Schedule 11)	
Refunded to U. S. Government.....	<u>297.23</u>
BALANCE AUGUST 31, 1953—EXHIBIT A.....	<u>37,183.00</u>

EXHIBIT D

SUMMARY OF ENDOWMENT FUNDS PRINCIPAL

For the Year Ended August 31, 1953

BALANCE AUGUST 31, 1952..... 3,204,331.03

ADDITIONS (Schedule 12)	252,861.74
Gifts.....	4,506.59
Investment income.....	1,276.42
Net gain on sale of investments.....	120.75
Transferred from Schedule 10.....	258,765.50
	<u>3,463,096.53</u>

DEDUCTIONS (Schedule 12)	6,678.25
Net loss on sale of investments.....	

BALANCE AUGUST 31, 1953—EXHIBIT A..... 3,456,418.28

SUMMARY OF PLANT FUNDS PRINCIPAL

For the Year Ended August 31, 1953

BALANCE AUGUST 31, 1952	441,824.05
ADDITIONS (Schedule 13)	
Gifts	517,155.01
Investment income	12,979.51
Transferred from Exhibit B	<u>1,631.93</u>
	531,766.45
	<u>973,590.50</u>
DEDUCTIONS (Schedule 13)	
Land and Buildings—Invested in Plant—Exhibit G	364,183.56
Equipment—Invested in Plant—Exhibit G	<u>1,610.26</u>
Transferred to Women's Board Courier	<u>79.17</u>
	365,872.99
BALANCE AUGUST 31, 1953—EXHIBIT A	<u>607,717.51</u>

EXHIBIT F

SUMMARY OF NET INVESTMENT IN PLANT

For the Year Ended August 31, 1953

BALANCE AUGUST 31, 1952	17,911,832.23
ADDITIONS	
Land and Buildings (Schedule 8)	
Surplus (Exhibit B)	187,963.04
Plant Funds (Exhibit F)	364,183.56
Trust Note Payable (Schedule 8A)	100,000.00
Portion of Veterans Housing razed	(-25,000.00)
	627,146.60
Equipment (Schedule 9)	
Surplus (Exhibit B)	46,934.50
Current Funds Restricted (Exhibit C)	1,080.78
Plant Funds (Exhibit F)	1,610.26
Departments (Schedule 2)	48,755.38
Equipment—Veterans Housing discarded	(-10,000.00)
	88,380.92
	715,527.52
	18,627,359.75
DEDUCTIONS	
Depreciation—Hospital (Schedules 2 and 8)—Exhibit B	60,000.00
" Hospital Equipment (Schedules 2 and 9)—Exhibit B	120,000.00
Trust Note assumed during year (Schedule 8A)	100,000.00
Trust Notes curtailed (Exhibit B)	10,876.71
	89,123.29
	269,123.29
BALANCE AUGUST 31, 1953—EXHIBIT A	18,358,236.46

SCHEDULES

CURRENT INCOME
For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL

STUDENT FEES		
Tuition and Laboratory		
Columbian	284,236.51	
Education	79,978.56	
Engineering	139,310.40	
General Studies	270,823.09	
Government	137,964.72	
Graduate Council	24,578.40	
Junior	529,242.52	
Law	280,608.13	
Medicine	263,925.00	
Post-Graduate Medical Education	12,611.70	
Pharmacy	18,264.67	
Special Students	114,239.52	
University Students	246,389.84	2,402,173.06
Summer Sessions—Columbian		
Education	26,884.20	
Engineering	20,273.65	
Government	6,545.00	
Graduate Council	20,974.60	
Junior	1,338.00	
Law	34,577.80	
Pharmacy	52,625.33	
Special	1,017.00	
University	14,015.60	
	55,726.00	233,977.18
Unallocated Old Fees		2,370.50
		2,638,520.74

Miscellaneous Fees

Application	25,333.53	
Aptitude	1,127.50	
Art Validation	150.00	
Binding Theses	1,035.00	
Breakage	488.00	
Engineers' Council	1,499.57	
Graduation	30,415.00	
Late	980.00	
Library Fines	497.72	
Publication of Theses	1,725.00	
Reinstatement	1,115.00	
Service	2,521.00	
Special Examinations	435.00	
Student Bar Association	4,878.88	
Testing Center	6,130.75	
Transcripts	3,158.75	
	81,440.70	2,719,961.44

CURRENT INCOME (Continued)
For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL (Continued)

INVESTMENT INCOME (Schedule 10.A)			
Endowment Funds—Unrestricted	34,575.50	123,563.57	
" Restricted	88,988.07	3,848.40	127,411.97
Plant Funds—Restricted			
GIFTS			
Unrestricted (Page 90)	.....	1,009.95	
Restricted (Schedule 10B—portion used)	53,593.29		
Restricted (Page 90)	4,147.75	57,741.04	58,750.99
STUDENT ACTIVITIES			
Athletics	56,519.39		
Engineers' Council	147.75		
Law Review	3,763.31		
Mecheleiv	2,812.87		
University Players	2,940.18		
Student Council—Cherry Tree	8,724.29	66,183.50	
" Hatchet	6,583.89		
" Homecoming Celebration	1,953.50		
" Miscellaneous	129.63		
" Modern Dance	1,185.75	18,577.06	84,760.56

MISCELLANEOUS

Discounts Earned.....	5,370.46	
Miscellaneous.....	2,912.51	
Reading Clinic.....	13,390.38	
Rent on Miscellaneous Properties—Net.....	50,377.52	
Speech Clinic.....	3,572.50	
Veterans Administration—Handling Fee.....	26,244.90	101,868.27

ORGANIZED RESEARCH (Schedule 10)

Deferred from 1951-52.....	197,916.59	
Income 1952-53.....	2,899,240.06	3,097,156.65
Deferred to 1953-54.....		255,286.98
		2,841,869.67

CURRENT INCOME (Continued)

For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL (Continued)

Hospital		
Patients		
Room Charges	454,992.00	
Private	1,099,580.29	
Semi-Private	227,491.00	
Wards	113,742.00	1,895,805.29
Nurseries		
Special Service Departments		
Operating Rooms	196,042.10	
Delivery Rooms	106,046.40	
Anesthesiology	237,760.85	
Oxygen Therapy	38,570.65	
X-Ray	208,220.31	
Physical Medicine	95,663.50	
Laboratories—Tests	340,586.02	
Pathology	38,683.00	
Pharmacy	215,818.58	
Cardiology	16,272.40	
Electroencephalography	15,514.25	
Radiodiagnosis Laboratory	6,908.34	
Post-Anesthesia Room	1,475.00	1,517,581.40
Out-Patient Departments		
Clinics	11,779.30	
Emergency	13,802.02	
Ophthalmology	2,831.80	
Urology	11,422.30	
Surgery	28,393.18	
Dental	612.00	
Gynecology—Obstetrics	2,959.10	71,799.70

Other Income			
Medical and Surgical Supplies	133,159.65		
Private Duty Nurses	27,961.50		
Telephone	13,653.58	174,774.73	
		<u>3,659,961.12</u>	
Less Allowances			
Group Hospitalization	45,604.43		
Hospital Service Agency	23,382.04		
D. C. Health Department	3,966.35		
Discounts	4,040.56		
Free Work	172,109.81		
Other	441.32	249,544.51	3,410,416.61
Other Sources			
Endowment Income			
Gifts		2,594.01	
Sales—Miscellaneous		1,440.00	
Parking Rent		1,459.50	
Bad Debt Recovery		600.00	
Fan Rent		380.93	
Miscellaneous		321.75	
Cafeteria		2,199.59	
Laundry		96,121.50	
Medical Abstracts		1,445.25	
Telephone Commissions		494.90	
Ambulance Service		281.50	
		<u>80.00</u>	
		107,418.93	3,517,835.54

CURRENT INCOME (Continued)
For the Year Ended August 31, 1953

AUXILIARY ENTERPRISES

RESIDENCE HALLS		
Nurses Home—Everglades Apartments		
Strong Hall	37,257.42	
Veterans Housing	32,345.25	
Wellington Hall	12,902.80	
2025 H Street, NW	22,138.33	
	<u>3,024.04</u>	107,667.84
SORORITY HALLS		
2112 G Street, NW	1,350.00	
2129 G Street, NW	4,503.00	
2131 G Street, NW	660.00	
802 21st Street, NW	630.00	
		<u>7,143.00</u>
MISCELLANEOUS		
Student Cafeteria—Commissaries	8,250.00	
Student Union	3,187.43	
Book Store	<u>287,493.40</u>	
Duplicating Bureau	409.12	
Lisner Auditorium	20,234.00	
Martha Washington Club	120.00	
Parking Lot	<u>18,863.50</u>	
		<u>338,557.45</u>
		<u>453,368.29</u>
TOTAL—EXHIBIT B		<u><u>9,905,836.97</u></u>

CURRENT EXPENSE

For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL

ADMINISTRATION AND GENERAL

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT C
President's Office	49,503.88	37,199.17	12,304.71	
Administrative Secretary's Office	75,206.87	47,354.92	27,851.95	
Dean of Faculties Office	14,011.45	11,226.65	2,784.80	
Treasurer's Office	140,662.54	119,087.66	21,574.88	
Business Manager's Office	123,892.17	51,952.55	61,163.22	10,776.40
Admissions Office	41,827.30	37,670.08	4,157.22	
Registrar's Office	47,107.71	41,782.69	5,325.02	
Activities for Men	27,751.35	18,887.68	8,863.67	
Activities for Women	12,265.60	11,298.53	967.07	
Adviser to Students from Foreign Countries	1,280.48	531.65	748.83	
Alumni Relations	12,074.76	9,039.65	3,035.11	
Public Relations	36,156.33	17,861.01	18,295.32	
Retirements	95,937.91	15,010.16	80,927.75	
University Chapels	1,822.69	797.66	1,025.03	
Veterans Administration	15,854.62	15,200.40	654.22	
Scientific Activities	3,589.76	3,286.68	303.08	
Financial	26,473.64		26,473.64	
TOTAL	725,419.06	438,187.14	276,455.52	10,776.40

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL (Continued)

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
INSTRUCTION				
Columbian College				
Administration.....	4,291.71	3,670.72	620.99	
Art.....	17,855.41	11,000.00	6,855.41	
Biology.....	13,335.94	12,735.00	415.45	185.49
Botany.....	10,876.13	10,525.00	274.13	77.00
Chemistry.....	64,206.88	57,350.19	6,513.70	342.99
Classical Languages and Literature.....	2,900.00	2,900.00		
Economics.....	37,046.24	36,895.00	151.24	
English.....	89,415.57	89,143.30	272.27	
Geography.....	9,000.05	8,329.96	462.09	208.00
Germanic Languages.....	16,924.98	16,900.00	24.98	
History.....	45,863.11	45,677.50	185.61	
Journalism.....	12,759.21	12,210.00	49.21	500.00
Mathematics.....	29,173.44	29,170.00	3.44	
Philosophy.....	8,218.45	8,200.00	18.45	
Physics.....	41,904.46	40,419.00	973.36	512.10
Political Science.....	32,029.00	31,950.00	79.00	
Psychology.....	36,447.28	35,875.82	448.77	122.69
Religion.....	14,752.91	14,699.96	52.95	
Romance Languages.....	54,101.13	53,900.00	201.13	
Secretarial Studies.....	5,321.73	4,820.00	324.73	177.00
Sociology.....	12,785.05	12,760.00	25.05	
Speech.....	27,234.21	25,967.92	1,146.49	119.80
Zoology.....	22,982.72	20,140.00	2,542.72	300.00
	149,325.64	585,239.37	21,641.17	2,545.07

Education	
Administration	5,163.33
Instruction—Education	39,051.97
“ Home Economics	9,737.75
	<u>53,953.05</u>

	4,465.75
	37,785.00
	8,610.00
	<u>50,860.75</u>

	697.58
	1,266.97
	1,127.75
	<u>3,092.30</u>

Engineering		
Administration	8,197.04	2,808.26
Instruction—Civil	35,439.59	951.68
“ Electrical	20,195.22	393.86
“ Mechanical	25,688.25	517.64
Engineer's Council	647.32	647.32
Mechelectiv	3,812.87	3,812.87
	<u>93,980.29</u>	<u>9,131.63</u>
		<u>2,291.89</u>

539.92
731.36
1,020.61

General Studies		
Administration	52,639.59	8,867.58
Instruction	81,038.13	
Reading Clinic	10,581.93	444.40
Institute of Correctional Administration	10,131.47	1,329.82
	<u>154,391.12</u>	<u>10,641.80</u>
		<u>234.28</u>

234.28

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL (Continued)

INSTRUCTION (Continued)

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
Government Administration	5,202.81	4,412.84	789.97	
Accounting	17,307.00	17,207.00	100.00	
Air Force Manpower Management	62,425.00	47,095.17	13,874.83	855.00
Business Administration	23,694.98	23,620.00	74.98	
Federal Government Management Interns	1,000.00	1,000.00		
Foreign Affairs	1,800.00	1,800.00		
Foreign Service Review Course	6,251.12	5,815.25	435.87	
Government and Economic Policy	900.00	900.00		
Public Administration	7,540.00	7,540.00		
Navy Comptrollership Program	11,992.83	10,004.04	1,988.79	
Statistics	17,865.04	17,765.00	100.04	
	<u>155,978.78</u>	<u>137,759.30</u>	<u>17,364.48</u>	<u>855.00</u>
Graduate Council Administration	5,277.70	2,946.00	2,331.70	
Instruction	2,889.34	1,200.00	1,689.34	
	<u>8,167.04</u>	<u>4,146.00</u>	<u>4,021.04</u>	
Junior—Administration	<u>6,380.86</u>	<u>5,384.00</u>	<u>996.86</u>	

Administration.....	18,683.88	13,417.89	5,265.99
Instruction.....	146,714.50	144,639.50	2,075.00
Patent Law Foundation.....	14,395.31	9,839.92	4,855.39
Law Review.....	11,480.00	2,057.35	9,422.65
Student Bar Association.....	1,336.53		1,336.53
	<u>192,610.22</u>	<u>169,654.66</u>	<u>22,955.56</u>
Medicine			
Administration.....	35,050.96	28,721.54	3,565.30
Anatomy.....	27,207.01	25,674.99	1,227.50
Bacteriology, Hygiene, Preventive Medicine.....	30,573.08	28,365.88	1,300.11
Biochemistry.....	31,318.71	29,322.34	1,232.67
Dermatology, Syphilology.....	1,515.00	1,450.00	65.00
Lecturers and Exchange Professors.....	605.00	605.00	
Medicine.....	34,792.61	33,806.80	985.81
Neurology, Neurological Surgery.....	4,879.16	4,618.32	260.84
Obstetrics, Gynecology.....	21,435.78	21,187.42	248.36
Ophthalmology.....	1,356.68	1,325.00	31.68
Pathology.....	25,940.98	25,118.77	515.04
Pediatrics.....	14,131.27	14,037.17	94.10
Pharmacology.....	23,180.92	21,547.50	813.22
Physical Medicine and Rehabilitation.....	2,950.00	2,950.00	
Physiology.....	30,660.46	29,059.84	1,252.83
Post-Graduate Medical Education.....	12,611.70	5,450.00	7,161.70
Psychiatry.....	2,597.45	2,500.00	97.45
Research—General.....	20,271.24	4,711.29	15,559.95
Surgery.....	24,039.97	23,799.92	240.05
Urology.....	1,450.00	1,450.00	
	<u>346,567.98</u>	<u>305,701.78</u>	<u>6,214.59</u>

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1953

EDUCATIONAL AND GENERAL (Continued)

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT C
INSTRUCTION (Continued)				
Pharmacy—Administration.....	2,042.76	1,650.00	392.76	
" Instruction.....	30,079.81	28,255.00	1,315.97	508.84
	<u>32,122.57</u>	<u>29,905.00</u>	<u>1,708.73</u>	<u>508.84</u>
Special—Administration.....	4,974.81	4,860.43	114.38	
University—Administration.....	6,953.58	6,237.14	716.44	
Summer Sessions—Administration.....	7,782.08	4,248.31	3,533.77	148.00
" Instruction.....	85,582.55	80,855.62	4,578.93	148.00
	<u>93,364.63</u>	<u>85,103.93</u>	<u>8,112.70</u>	
Air Science and Tactics—ROTC—Instruction.....	5,549.69	5,172.80	376.89	

Physical Education—Men	28,682.21	21,453.16	7,229.05
" Women	27,881.51	22,914.98	4,966.53
	<u>56,563.72</u>	<u>44,368.14</u>	<u>12,195.58</u>
TOTAL INSTRUCTION	1,820,983.95	1,660,465.11	147,721.17
LIBRARIES—Books	24,005.60		24,005.60
Other	82,967.22	68,654.63	14,164.59
	<u>106,972.82</u>	<u>68,654.63</u>	<u>24,153.60</u>
MAINTENANCE AND OPERATION OF PLANT	503,150.20	209,705.80	293,444.40
STUDENT ACTIVITIES			
Health Administration	21,499.61	17,300.00	4,199.61
Men's Athletics	220,642.17	31,891.52	188,750.65
Recreation Program	2,156.97	990.00	1,166.97
Student Activities Office	3,654.53	2,429.88	1,224.65
Student Council Accounts	27,085.62		27,085.62
University Accounts	4,494.03	2,750.00	1,744.03
University Players	12,018.55	7,138.75	4,879.80
	<u>291,551.48</u>	<u>62,500.15</u>	<u>229,051.33</u>
ORGANIZED RESEARCH (Schedule 10)	2,841,869.67	1,582,094.31	1,259,775.36

CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1953

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
EDUCATIONAL AND GENERAL (Continued)				
HOSPITAL				
Administration.....	328,480.45	155,777.27	172,703.18	
Dietary.....	534,316.47	218,865.01	315,451.46	
Household and Property				
Laundry.....	59,060.66	57,488.67	1,571.99	
Linen Service.....	40,532.62	12,123.76	28,408.86	
Housekeeping.....	144,120.36	126,022.83	18,097.53	
Plant.....	152,381.48	61,471.08	90,910.40	
	396,095.12	257,106.34	138,988.78	
Professional Care—General				
Medical and Surgical Service	191,003.28	70,759.32	120,243.96	
Cardiology.....	8,149.76	6,618.66	1,531.10	589.71
Medical Library.....	1,839.63	1,249.92	714.58	
Nursing Care.....	785,538.11	784,823.53	2,516.88	
Medical Records.....	31,701.63	29,184.75	96,118.05	
Pharmacy.....	111,648.89	15,530.84	22.08	
Central Sterile Supply.....	21,930.78	21,908.70		
	1,151,812.08	930,075.72	221,146.65	589.71
Professional Care—Special				
Operating Rooms.....	130,326.17	76,722.48	53,603.69	
Delivery Rooms.....	64,776.92	53,633.11	11,143.81	
Laboratories.....	128,866.68	113,138.93	15,727.75	
X-Ray.....	100,302.83	65,584.41	34,718.42	
Electroencephalography.....	5,780.12	4,559.43	1,220.69	
Radioisotope.....	2,325.73	300.00	2,025.73	
Anesthesiology.....	100,469.89	76,012.24	24,457.65	
Oxygen Therapy.....	31,980.81	5,572.40	16,408.41	
Physical Medicine.....	46,919.42	45,731.46	1,187.96	
	681,748.57	441,254.46	160,494.11	

Out-Patient Departments

General Services	22,380.23	22,125.35	254.88
Medicine	18,318.42	11,882.91	6,435.51
Surgery	11,408.75	7,953.71	3,455.04
Gynecology and Obstetrics	3,853.24	3,318.95	534.29
Ophthalmology	3,864.54	3,406.85	457.69
Dental	1,013.59		1,013.59
Urology	7,875.67	3,332.97	4,542.70
Nursing Supervision	6,716.78	6,716.78	
Housekeeping	9,269.60	9,269.60	
Emergency	15,622.00	12,167.51	3,454.49
	<u>100,322.82</u>	<u>80,174.63</u>	<u>20,148.19</u>

Miscellaneous

Ambulance Service	110.00		110.00
Residents' and Interns' Room Charges	(-14,160.00)		(-14,160.00)
Depreciation—Building (Exhibit G) (Schedule 8)	60,000.00		60,000.00
" Equipment (Exhibit G) (Schedule 9)	120,000.00		120,000.00
Allowance for Doubtful Accounts	71,126.73		71,126.73
Interest	6,485.14		6,485.14
Nurses Home	15,000.00		15,000.00
Scholarships	3,503.00		3,503.00
	<u>262,064.87</u>		<u>262,064.87</u>

3,374,840.38	2,083,253.43	1,290,997.24	589.71
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CURRENT EXPENSE (Continued)
For the Year Ended August 31, 1953

AUXILIARY ENTERPRISES

	TOTAL	SALARIES	OTHER EXPENSE	EQUIPMENT EXHIBIT G
RESIDENCE HALLS				
Strong Hall.....	42,172.53	14,174.29	27,998.24	
Veterans Housing.....	16,969.69	9,409.06	7,560.63	
Welling Hall.....	11,293.27	4,663.50	6,629.77	
2025 H Street, NW.....	2,418.33	1,108.86	1,309.47	
	<u>72,853.82</u>	<u>29,355.71</u>	<u>43,498.11</u>	
SORORITY HALLS				
2112 G Street, NW.....	707.33	120.00	587.33	
2129 G Street, NW.....	3,921.38	675.00	3,246.38	
2131 G Street, NW.....	540.99	100.00	440.99	
	<u>5,169.70</u>	<u>895.00</u>	<u>4,274.70</u>	
SERVICES				
Book Store, Student Union.....	299,901.76	43,954.72	255,947.04	438.00
Medical Book Store.....	4,741.08	437.97	3,865.11	
Duplicating Bureau.....	335.76	.....	335.76	
Liner Auditorium.....	24,484.12	10,699.89	13,784.23	
	<u>329,462.72</u>	<u>55,092.58</u>	<u>273,932.14</u>	<u>438.00</u>
	<u>407,486.24</u>	<u>85,343.29</u>	<u>321,704.95</u>	<u>438.00</u>

STUDENT AID

SCHOLARSHIPS.....	<u>40,875.22</u>	.....	<u>40,875.22</u>	
TOTAL EXPENSE—EXHIBIT B.....	10,113,149.02	<u>6,190,203.86</u>	<u>3,874,189.78</u>	<u>48,755.38</u>
Less overhead expense charged to various departments and included in "Other Expense" above—Exhibit B.....	<u>530,308.16</u>			
TOTAL EXPENSE, ADJUSTED—EXHIBIT B.....	<u>9,582,840.86</u>			

ACCOUNTS RECEIVABLE and PREPAID EXPENSE

August 31, 1953

EXHIBIT A

ACCOUNTS RECEIVABLE

Organized Research Funds.....	588,236.62
Tuition and Other Fees.....	26,167.09
Dormitory Rent.....	249.94
Cherry Tree.....	164.70
Mecheleci.....	394.12
Hospital.....	492,179.69
Less Provision for Doubtful Accounts.....	<u>135,000.00</u>
	337,179.69
	<u>972,392.16</u>

PREPAID EXPENSE

University Supplies—Stockroom.....	50,620.00
“ “ Book Store.....	61,060.00
“ “ Microscopes.....	601.26
“ “ Travel.....	13,858.84
“ “ Miscellaneous.....	10,046.24
Hospital Supplies—Medical and Surgical.....	<u>63,035.00</u>
“ “ Pharmacy.....	16,596.00
“ “ Maintenance and Housekeeping.....	9,273.00
“ “ Linens and Bedding.....	9,382.00
“ “ Office.....	4,720.00
“ “ Food.....	5,736.00
“ “ Insurance.....	16,706.51

125,448.51

261,634.85

ASSETS OF LOAN FUNDS

August 31, 1953

FUNDS	TOTAL	CASH	LOANS RECEIVABLE
D.C.—D.A.R. Loan Fund.....	90.40	.....	90.40
George Washington Law Association Loan Fund.....	822.42	662.42	160.00
Harris Loan Fund.....	400.00	400.00	.....
Home Economics Loan Fund.....	382.35	382.35	.....
Kellogg Loan Fund.....	18,363.92	3,395.12	14,968.80
Pfizer Loan Fund.....	1,000.00	1,000.00	.....
School of Medicine Loan Fund.....	1,140.78	740.78	400.00
Sutherland Loan Fund.....	1,360.00	.....	1,360.00
University Loan Fund.....	8,374.66	8,132.66	242.00
War Loan Fund.....	5,248.47	.....	5,248.47
TOTALS—EXHIBIT A.....	37,183.00	14,713.33	22,469.67

SCHEDULE 4

ASSETS OF ENDOWMENT FUNDS

August 31, 1953

CONSOLIDATED ENDOWMENT FUNDS

	BONDS	DESCRIPTION	%	DUE	VALUE		
					PAR	MARKET	BOOK
American Telephone and Telegraph Co.		Convertible Debenture	2¾	1961	12,000	12,960.00	12,738.00
Atchison, Topeka and Santa Fe Ry. Co.		General Mortgage	4	1995	2,000	2,200.00	1,970.00
Baltimore and Ohio R. R. Co., Pittsburgh,							
Lake Erie and W. Va. System		Refunding Mortgage A	4	1980	5,000	4,450.00	5,032.00
Boston Edison Co.		First Mortgage D	3½	1982	30,000	28,800.00	30,470.00
Capital Transit Co.		First Refunding Mortgage A	4	1964	8,000	7,680.00	8,000.00
Consumers Power Co.		First Mortgage	3¾	1987	30,000	28,800.00	30,874.00
Dow Chemical Co.		Convertible Subordinated Deb.	3	1982	15,000	14,700.00	15,217.00
Federal Land Banks		Consolidated Farm Loan	2¾	1958	75,000	73,687.00	74,507.81
Great Northern Railway Co.		General Mortgage D	4½	1976	25,000	27,000.00	25,169.00
Illinois Bell Telephone Co.		First Mortgage A	2¾	1981	30,000	26,100.00	28,125.00
National Container Corporation		Sinking Fund Debenture	4½	1966	20,000	19,800.00	20,000.00
New Jersey Bell Telephone Co.		Debenture	3½	1988	25,000	23,750.00	25,241.00
New York Central Railroad Co.		Refunding and Improvement A	4½	2013	50,000	21,300.00	24,779.44
Northern Natural Gas Co.		Sinking Fund Debenture	4½	1973	5,000	5,200.00	5,306.25

Pennsylvania Railroad Co.	General Mortgage E.	4½	1984	25,000	24,000.00	26,417.00
R. J. Reynolds Tobacco Co.	Consolidated Mortgage.	4½	1960	1,000	1,070.00	1,014.00
Service Pipe Line Co.	Debenture.	3	1973	30,000	29,400.00	30,035.00
Southern Railway Co.	Sinking Fund Debenture.	3.2	1982	25,000	24,250.00	25,000.00
State Loan and Finance Corporation	Development and General Mtg. A.	6½	1956	2,000	2,140.00	2,060.00
Union Oil Co. of California	Sinking Fund Subordinated Deb.	5	1960	10,000	10,000.00	10,000.00
United Gas Corporation	Convertible Subordinated Deb.	3½	1972	30,000	30,300.00	32,180.00
United States of America	Sinking Fund Debenture.	4½	1972	20,000	20,800.00	20,446.00
"	Treasury	2½	1959-62	30,000	28,443.00	30,000.00
"	Savings G.	2½	1967-72	8,000	7,410.00	7,795.00
"	Savings G.	2½	10-54	23,000	22,586.00	23,000.00
"	Savings G.	2½	11-54	47,000	46,154.00	47,000.00
"	Savings G.	2½	1-55	17,000	16,694.00	17,000.00
"	Savings G.	2½	4-55	36,500	35,733.00	36,500.00
"	Savings G.	2½	9-55	41,100	40,113.00	40,880.00
"	Savings G.	2½	10-55	7,500	7,320.00	7,456.00
"	Savings G.	2½	2-56	9,000	8,784.00	9,000.00
"	Savings G.	2½	2-58	10,000	9,640.00	10,000.00
"	Savings G.	2½	7-58	35,000	33,635.00	35,000.00
"	Savings F.	2.53	8-56	200	180.00	148.00
"	Savings F.	2.53	11-58	200	167.00	148.00
Washington Gas Light Co.	Investment B.	2½	1975-80	10,000	9,500.00	10,000.00
West Shore Railroad Co.	General Mortgage	5	1960	6,000	6,540.00	6,269.00
	Guaranteed First Mortgage Reg.	4	2361	26,000	15,340.00	22,620.00
					<u>726,626.00</u>	<u>757,397.50</u>

SCHEDULE 5—PAGE 1

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1953

CONSOLIDATED ENDOWMENT FUNDS (Continued)

STOCKS—PREFERRED	DESCRIPTION	C%	SHARES	VALUE	
				MARKET	BOOK
American Airlines.....	Cumulative Convertible.....	3½	200	15,000.00	17,132.16
American Smelting and Refining Co.....	Cumulative.....	7	120	17,040.00	17,496.70
American Viscose Corporation.....	Cumulative.....	5	100	11,400.00	10,750.00
Appalachian Electric Power Co.....	Cumulative.....	4½	100	9,900.00	10,600.00
Atchison, Topeka and Santa Fe Ry. Co.....	Noncumulative.....	5	120	6,360.00	5,987.50
Cleveland and Pittsburgh R. R. Co.....	Guaranteed.....	7	100	7,200.00	8,500.00
Commonwealth Edison Co.....	\$1.32 Convertible.....		350	11,900.00	10,895.49
“	\$1.40 Convertible.....		120	4,200.00	4,125.00
Connecticut Light and Power Co.....	\$2.20 Cumulative.....		400	19,600.00	21,008.32
Consolidated Edison Co. of New York.....	\$5 Cumulative.....		300	31,800.00	32,386.17
Corning Glass Works.....	Cumulative.....	3½	240	22,560.00	24,000.00
Detroit, Hillsdale and S. W. R. R. Co.....	Guaranteed.....	4	163	10,269.00	10,432.00
General Motors Corporation.....	\$3.75 Cumulative.....		200	18,600.00	20,000.00
“	\$5 Cumulative.....		100	11,600.00	12,525.25
General Shoe Corporation.....	\$3.50 Cumulative.....		50	4,100.00	5,180.00

<i>Gold and Stock Telegraph Co.</i>	Guaranteed	6	100	13,200.00	11,700.00
<i>Gulf Power Co.</i>	Cumulative	4.64	100	9,700.00	10,300.00
<i>Hecht Co.</i>	Cumulative	3¾	50	4,100.00	5,150.00
<i>H. J. Heinz Co.</i>	Cumulative	3.65	200	18,600.00	20,550.00
<i>International Harvester Co.</i>	Cumulative	7	100	15,200.00	18,204.43
<i>Marine Midland Corporation</i>	Cumulative, Par Value \$50.	4¾	400	21,600.00	21,194.05
<i>May Department Stores</i>	\$3.75 Cumulative		200	17,800.00	20,700.00
<i>McCroly Stores Corporation</i>	Cumulative Convertible	3½	200	15,000.00	20,670.70
<i>Merck and Co.</i>	\$3.50 Cumulative		105	9,030.00	10,497.50
<i>Oliver Corporation</i>	Cumulative Convertible	4½	200	15,000.00	21,520.34
<i>Pacific Gas and Electric Co.</i>	Redeemable First	4.8	1,000	25,000.00	27,250.00
<i>Panhandle Eastern Pipe Line Co.</i>	Cumulative	4	200	19,400.00	20,172.40
<i>Pennsylvania Electric Co.</i>	Cumulative C	3.7	200	16,400.00	20,500.00
<i>Phizer, Chas., and Co., Inc.</i>	Cumulative Convertible Second	4	150	14,250.00	15,225.00
<i>Philadelphia Electric Co.</i>	Cumulative	3.8	100	9,100.00	10,270.00
<i>Potomac Electric Power Co.</i>	Cumulative A, Par Value \$50	3.6	304	12,464.00	15,732.00
<i>Public Service Electric and Gas Co.</i>	\$1.40 Dividend Preference		550	14,300.00	15,400.87
<i>Rayonier, Inc.</i>	\$2 Cumulative, Par Value \$25		400	12,800.00	13,584.11
<i>R. J. Reynolds Tobacco Co.</i>	Cumulative	3.6	100	8,600.00	10,017.84
<i>Rogers, George A., and Co.</i>	\$6 Cumulative First		1	100.00	100.00
<i>Safeway Stores, Inc.</i>	Cumulative Convertible	4½	100	10,800.00	10,000.00
<i>Southern California Edison Co.</i>	Cum. Conv. Preference, Par Value \$25	4.56	800	25,600.00	21,000.00
<i>Sterling Drug, Inc.</i>	Cumulative	3½	200	18,000.00	20,500.00
<i>Virginia Electric and Power Co.</i>	\$4.04 Cumulative		300	27,900.00	30,681.00
				555,473.00	601,944.83

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1953

CONSOLIDATED ENDOWMENT FUNDS (Continued)

STOCKS—COMMON

	SHARES	MARKET	BOOK
Allis-Chalmers Manufacturing Co.	500	22,000.00	21,347.00
American Gas and Electric Co.	719	20,851.00	13,606.81
Chrysler Corporation	200	13,200.00	11,500.25
Commonwealth Edison Co.	640	21,760.00	18,010.00
Continental Can Co., Inc.	31	1,643.00	2,371.69
Continental Illinois National Bank and Trust Co. of Chicago	337	27,971.00	16,920.27
Continental Oil Co.	420	21,840.00	9,454.95
du Pont, E. I., de Nemours and Co.	56	5,376.00	4,907.00
Eastman Kodak Co.	315	13,230.00	13,256.25
General Electric Co.	100	7,100.00	5,405.00
General Motors Corporation	1,040	58,240.00	28,528.75
Goodyear Tire and Rubber Co.	420	19,320.00	9,411.57
International Nickel Co. of Canada, Ltd.	200	7,800.00	12,035.25
Kennecott Copper Corporation	300	18,300.00	18,227.50
Mergenthaler Linotype Co.	12	324.00	588.00
National City Bank of New York	57	2,793.00	4,175.13
New York Air Brake Co.	400	7,200.00	8,646.84
Phelps Dodge Corporation	400	12,000.00	7,857.25
R. J. Reynolds Tobacco Co.—New Class B	100	4,400.00	5,112.50
Riggs National Bank	77	30,030.00	28,491.00
Security Storage Co.	67	7,035.00	5,058.50
Socony-Vacuum Oil Co.	1,683	55,539.00	28,430.16
Standard Oil Co. of California	661½	33,737.00	11,796.85
Travelers Insurance Co.	40	29,000.00	16,045.68
United Gas Corporation	880	22,880.00	15,830.79
Wm. Wrigley Jr., Co.	10	730.00	707.50
		464,299.00	317,722.49

TRUST NOTES RECEIVABLE

	%	Due	
Burman Properties, Inc.—Secured by lot 804 and part of lot 808 in square north of 5051, and parcels 175-30 and 175-41	5	1,000.00	1,000.00
Crow, F. C.—Secured by 160 acres of land in Pemiscot County, Missouri. Due \$5,954.46 each December 15 until paid in full	4	47,635.69	47,635.69
Grady, Dallas E.—Secured by lot 6, square 3953	4	6,000.00	6,000.00
Kersey, A. P.—Secured by 480 acres of land in Pemiscot County, Missouri. Due \$12,500 each December 15 until paid in full	4	100,000.00	100,000.00
Snow, Chester A.—Secured by lot 77, square 162	4	8,000.00	8,000.00
Wollberg, Ben—Secured by lot 9, square 16	4	3,500.00	3,500.00
		<u>166,135.69</u>	<u>166,135.69</u>
 REAL ESTATE			
Strong Hall—620 21st Street, NW. Lots 19-20-818-819, square 80		<u>211,783.00</u>	<u>211,783.00</u>
 CASH			
		<u>8,108.20</u>	<u>8,108.20</u>
 TOTALS		<u>2,132,424.89</u>	<u>2,063,091.71</u>

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1953

SCOTTISH RITE FUND

BONDS	DESCRIPTION	DUE %	VALUE		
			PAR	MARKET	BOOK
American Telephone and Telegraph Co..	Debenture.....	2½ 1980	25,000	21,750.00	25,000.00
" "	Convertible Debenture.....	3½ 1964	20,000	23,200.00	22,888.00
" "	First and Refunding Mortgage A..	4 1964	10,000	9,600.00	10,000.00
Capital Transit Co.....	First Mortgage.....	5 1965	12,000	13,080.00	12,664.00
Lexington and Eastern Railway Co.....	Sinking Fund Debenture.....	4½ 1973	20,000	20,800.00	21,225.00
Northern Natural Gas Co.....	Prior Lien Railway and Land Grant	4 1997	25,000	25,250.00	26,733.00
Northern Pacific Railway Co.....	Sinking Fund Subordinated Deb...	5 1960	5,000	5,000.00	5,000.00
State Loan and Finance Corporation...	Treasury.....	2½ 1959-62	72,000	68,264.00	72,204.00
United States of America.....	Savings G.....	2½ 10-54	100,000	98,200.00	100,000.00
" "	Savings G.....	2½ 1-55	100,000	98,200.00	100,000.00
" "	Savings G.....	2½ 2-56	1,000	976.00	1,000.00
" "	Savings G.....	2½ 9-62	40,000	38,240.00	40,000.00
" "	Investment B.....	2½ 1975-80	25,000	23,750.00	25,000.00
" "	Treasury.....	3¼ 1983	50,000	50,203.00	50,000.00
Washington Gas Light Co.....	General Mortgage.....	5 1960	4,000	4,360.00	4,330.00
West Shore Railroad Co.....	Guaranteed First Mortgage Reg... 4	2361	14,000	8,260.00	12,355.00
				509,133.00	528,399.00

STOCKS—PREFERRED			SHARES	
American Viscose Corporation.....	Cumulative.....	5	100	11,400.00
Celanese Corporation of America.....	Cumulative.....	4½	200	15,800.00
Commonwealth Edison Co.....	\$1.32 Convertible.....	.....	150	5,100.00
Consolidated Gas Electric Light and Power Co. of Baltimore.....	Cumulative C.....	4	130	12,480.00
Dresser Industries.....	Cumulative Convertible.....	3¾	200	15,600.00
Federated Department Stores, Inc.....	Cumulative.....	4¼	100	9,800.00
General Motors Corporation.....	\$3.75 Cumulative.....	.....	40	3,720.00
General Shoe Corporation.....	\$3.50 Cumulative.....	.....	50	4,100.00
Goodyear Tire and Rubber Co.....	\$5 Cumulative Convertible.....	.....	100	10,500.00
Gulf Power Co.....	Cumulative.....	4.64	100	9,700.00
Hecht Co.....	Cumulative.....	3¾	150	12,300.00
Illinois Power Co.....	Cumulative.....	4.26	400	18,800.00
International Harvester Co.....	Cumulative.....	7	50	7,600.00
Montgomery Ward and Co.....	\$7 Cumulative, Class A.....	.....	100	16,400.00
Pacific Telephone and Telegraph Co.....	Cumulative.....	6	200	26,800.00
Pfizer, Chas., and Co., Inc.....	Cumulative Convertible Second.....	4	50	4,750.00
Philadelphia Electric Co.....	Cumulative.....	3.8	100	9,100.00
Philip Morris and Co., Ltd., Inc.....	Cumulative.....	4	138	13,110.00
Potomac Electric Power Co.....	Cumulative A, Par Value \$50.....	3.6	300	12,300.00
R. J. Reynolds Tobacco Co.....	Cumulative.....	3.6	200	17,200.00
				<u>236,560.00</u>
				<u>272,211.49</u>

ASSETS OF ENDOWMENT FUNDS (Continued)

August 31, 1953

SCOTTISH RITE FUND (Continued)

	SHARES	VALUE	
		MARKET	BOOK
Stocks—Common			
Cincinnati Milling Machine Co.	500	21,500.00	18,609.10
Commonwealth Edison Co.	800	27,200.00	21,770.00
Continental Oil Co.	1,000	52,000.00	15,725.25
General Electric Co.	400	28,400.00	17,210.00
Goodyear Tire and Rubber Co.	420	19,320.00	9,649.34
Hecht Co.	500	12,500.00	14,562.50
International Nickel Co. of Canada, Ltd.	300	11,700.00	13,032.50
Montgomery Ward and Co.	750	42,750.00	32,577.25
Riggs National Bank	125	48,750.00	32,625.00
Standard Oil Co. of California	220½	11,246.00	2,600.00
Standard Oil Co. of New Jersey	1,072	73,968.00	37,854.29
Union Carbide and Carbon Corporation	900	56,700.00	25,122.50
United Gas Corporation	770	20,020.00	13,851.66
		<u>426,054.00</u>	<u>255,189.39</u>
Cash		20.26	20.26
		<u>1,171,767.26</u>	

TOTALS	SCOTTISH RITE FUND	1,000,000.00
	RESERVE FOR PROTECTION OF SCOTTISH RITE FUND INVESTMENTS	55,820.14
		<u>1,055,820.14</u>

SUMMARY OF ASSETS OF ENDOWMENT FUNDS

August 31, 1953

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Funds	Total Assets	Cash	INVESTMENTS					Real Estate
			Total	Bonds	Stocks		Trust Notes	
					Preferred	Common		
Consolidated	2,063,091.71	8,108.20	2,054,983.51	757,397.50	601,944.83	317,722.49	166,135.69	211,783.00
Scottish Rite	1,055,820.14	20.26	1,055,799.88	528,399.00	272,211.49	255,189.39	.....	.....
TOTALS—EXHIBIT A	3,118,911.85	8,128.46	3,110,783.39	1,285,796.50	874,156.32	572,911.88	166,135.69	211,783.00

SCHEDULE 5—PAGE 5

ENDOWMENT FUNDS—HELD IN TRUST BY OTHERS

August 31, 1953

FUNDS	TRUSTEES	BOOK VALUE
Andrews Scholarship Fund.....	American Security and Trust Co.....	5,194.03
Fry Professorship Fund.....	National Savings and Trust Co.....	106,061.45
Harvey Scholarship Fund.....	Washington Loan and Trust Co.....	4,631.97
Sanders Fellowship Fund.....	National Savings and Trust Co.....	205,977.38
Sharpe School of Medicine Fund.....	National Savings and Trust Co.....	8,207.40
Spencer Scholarship Fund.....	Northern Trust Co.....	7,434.20
TOTAL—EXHIBIT A.....		337,506.43

August 31, 1953

CONSOLIDATED PLANT FUNDS

BONDS

	DESCRIPTION	%	DUE	PAR	MARKET	BOOK
Federal Land Banks.....	Consolidated Farm Loan.....	2½	1956	50,000	49,500.00	50,000.00
State Loan and Finance Corporation	Sinking Fund Subordinated Debenture..	5	1960	10,000	10,000.00	10,000.00
United States of America.....	Treasury Notes A.....	2½	12-53	134,000	134,124.00	134,000.00
"	Certificates of Indebtedness D.....	2½	8-54	30,000	30,046.00	30,000.00
"	Treasury.....	2	9-53	10,000	10,012.00	10,000.00
"	Treasury.....	2	12-54	35,000	34,857.00	34,825.00
"	Treasury.....	2½	1952-55	25,000	24,937.00	25,000.00
"	Savings G.....	2½	11-54	3,000	2,946.00	3,000.00
"	Savings G.....	2½	10-55	1,000	976.00	1,000.00
"	Savings G.....	2½	10-57	1,700	1,638.00	1,700.00
"	Savings G.....	2½	4-61	18,600	17,614.00	18,600.00
"	Savings F.....	2.53	12-57	100	86.10	86.10
					<u>316,736.10</u>	<u>318,211.10</u>

STOCKS—PREFERRED

Garfinckel and Co.....	Cumulative Convertible.....	4½	750	13,500.00	13,037.50
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STOCKS—COMMON

Garfinckel and Co.....		2,370	42,660.00	44,860.00
Glidden Co.....		102	2,958.00	2,575.00
			<u>45,618.00</u>	<u>47,435.00</u>

CASH.....

115,101.00

TOTALS.....

490,955.10

493,784.60

ASSETS OF PLANT FUNDS (Continued)

August 31, 1953

PAIRO FUND

FAIRFAX FUND					VALUE	
BONDS	Description	%	Due	Par	Value	
					Market	Book
Federal Land Banks.....	Consolidated Farm Loan.....	2½	1956	50,000	49,500.00	50,000.00
Morris and Essex Railroad Co.....	First and Refunding Mortgage.....	3½	2000	6,000	3,600.00	4,605.00
Southern Pacific Co. (Oregon Lines).....	First Mortgage A.....	4½	1977	5,000	5,050.00	5,139.00
United States of America.....	Savings G.....	2½	2-54	500	496.00	500.00
"	Savings G.....	2½	11-56	300	291.00	300.00
"	Treasury.....	2½	1964-69	500	467.00	500.00
"	Treasury.....	3¼	1978-83	1,000	1,004.00	1,000.00
					<u>60,408.00</u>	<u>62,044.00</u>
STOCKS—COMMON					SHARES	
American Security and Trust Co.....				200	6,600.00	8,220.00
Mergenthaler Linotype Co.....				300	8,100.00	15,806.25
National City Bank of New York.....				63	3,087.00	2,864.79
Pennroad Corporation.....				100	1,200.00	1,300.00
Riggs National Bank.....				52	20,280.00	19,695.00
					<u>39,267.00</u>	<u>47,886.04</u>
Cash.....					<u>4,002.87</u>	<u>4,002.87</u>
TOTALS					<u>103,677.87</u>	<u>113,932.91</u>

SUMMARY OF ASSETS OF PLANT FUNDS

August 31, 1953

FUNDS	Total Assets	Cash	INVESTMENTS			
			Total	Bonds	Stocks	
					Preferred	Common
Consolidated Plant.....	493,784.60	115,101.00	378,683.60	318,211.10	13,037.50	47,435.00
Pairo.....	113,932.91	4,002.87	109,930.04	62,044.00		47,886.04
TOTALS—EXHIBIT A.....	607,717.51	119,103.87	488,613.64	380,255.10	13,037.50	95,321.04

SCHEDULE 7—PAGE 2

LAND AND BUILDINGS
For the Year Ended August 31, 1953

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1952	Net Additions	Balance August 31, 1953
Biological Sciences Building C.....	Part of 834	102	1914-35	151,129.97		151,129.97
Book Store.....	Part of 843	79	1949	48,105.49		48,105.49
Chapin Hall.....	Part of 838	79	1948	85,301.23		85,301.23
Corcoran Hall (Schedule 8A).....	Part of 834	102	1919-24	327,481.92		327,481.92
	5-13-15-17-19					
	20-24-28-29					
	800-801-802					
	805 thru 821					
	823-828-829-830					
	832-833-834-836					
	838-839-842					
Field House Site.....	Part of 834	56	1936-52	283,512.33		283,512.33
	Part of 841	102	1924-25	58,331.44		58,331.44
	Entire Square	79	1918-38	239,035.63		239,035.63
Gymnasium.....	828-838-843	54	1945	7,396,590.82	10,572.34	7,407,163.16
Hall of Government.....	Part of 834	79	1929-41	879,976.91		879,976.91
Hospital.....	Part of 834	102	1912-39	372,230.19	1,017.60	373,247.79
Lisner Auditorium.....	Part of 834	102	1923-30	57,583.87		57,583.87
Lisner Library.....	Part of 834	79	1938-51	621,208.50		621,208.50
Mechanical Laboratory.....	844	55	1947	401,500.00		401,500.00
Monroe Hall.....	806 thru 811					
Nurses Home (Schedule 8A).....	17 thru 39					
	800 thru 817					
Parking Lot—2314 I Street, NW.....	822 thru 828-830	41	1945-52	575,287.43		575,287.43
Pharmacology Laboratory.....	27-28-816-817	79	1944	100,091.18		100,091.18
Physics Laboratory.....	Part of 843	79	1947	26,075.12		26,075.12
President's Office.....	Part of 834	102	1936	11,700.00		11,700.00
School of Medicine, Cancer Clinic (Schedule 8A).....	43	250	1882-1932	995,706.34		995,706.34
Shop, Stockroom.....	53	101	1943	26,761.24		26,761.24
Social Sciences Building D.....	Part of 834	102	1922-36	290,982.60	252,373.10	543,355.70

SCHEDULE 8—PAGE 1

Sorority Hall—2112 G Street, NW.	816	1948	30,000.00	30,000.00
" 2129 G Street, NW.	805	1936	36,989.72	36,989.72
" 2131 G Street, NW.	Part of 8	1935	25,500.00	25,500.00
" 802 21st Street, NW.	35	1938	13,000.00	13,000.00
Staughton Hall	834-835	1941	62,574.67	62,574.67
Stockton Hall (Schedule 8A)	Part of 834	1920-25	279,325.93	279,325.93
Student Activities Building	41	1947	75,000.00	75,000.00
Student Union Building	804-836	1947-48	526,599.63	526,599.63
Veterans Housing—Part of Square 56		1948	75,000.00	50,000.00
Warwick Memorial Building	1-2-3	1948-52	278,735.00	642,918.56
Welling Hall	15	1947	209,047.72	209,047.72
G Street, NW—1910.	C	1949	20,000.00	20,000.00
" 2002	27	1949	33,600.00	33,600.00
" 2024	16	1922	14,955.00	14,955.00
" 2026	15	1929	15,074.96	15,074.96
" 2033	Part of 834	1922	32,500.00	32,500.00
" 2106	817	1937	19,000.00	19,000.00
" 2108	41	1946	31,500.00	31,500.00
" 2110	40	1949	69,479.23	69,479.23
" 2114	815	1949	47,250.00	47,250.00
" 2116	A	1946	20,500.00	20,500.00
" 2118	B	1946	17,500.00	17,500.00
" 2135	807	1943	14,000.00	14,000.00
" 2222	25	1948	8,800.00	8,800.00
" 2313-15-17-19-21	803-829	1947	23,400.00	23,400.00
			(-25,000.00)	
			364,183.56	

LAND AND BUILDINGS—(Continued)
For the Year Ended August 31, 1953

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1952	Net Additions	Balance August 31, 1953
H Street, NW—1909	800	119	1948	32,500.00		32,500.00
" 1911-13	3	119	1948	67,711.70		67,711.70
" 1921	802	119	1952	32,500.00		32,500.00
" 1923	803	119	1949	38,000.00		38,000.00
" 2011	806	101	1943	13,000.00		13,000.00
" 2020	Part of 834	102	1922	98,516.71		98,516.71
" 2025	52	101	1945	21,000.00		21,000.00
" 2027	813	101	1941	11,000.00		11,000.00
" 2029	814	101	1945	11,500.00		11,500.00
" 2031	815	101	1948	13,000.00		13,000.00
" 2037	817	101	1940	23,500.00		23,500.00
" 2111 (Schedule 8A)	802	77	1950	17,500.00		17,500.00
" 2113	804	77	1940	12,500.00		12,500.00
" 2115	805	77	1944	12,431.25		12,431.25
" 2127	809	77	1946	7,500.00		7,500.00
" 2132-40½	53 thru 59	79	1951	85,000.00		85,000.00
" 2137-39	811	77	1948	13,500.00		13,500.00
" 2142	D	79	1935	1,500.00		1,500.00
" 2142½	815	79	1940	3,000.00		3,000.00
" 2209	804	55	1945	6,650.00		6,650.00
" 2211	16	55	1948	16,125.00		16,125.00
" 2213	17	55	1946	13,000.00		13,000.00
" 2215-19	18-805	55	1944	15,500.00		15,500.00
" 2300	817	42	1942	10,750.00		10,750.00
" 2308	43	42	1948	7,900.00		7,900.00
" 2312	814	42	1948	7,000.00		7,000.00
" 2316	812	42	1947	9,600.00		9,600.00

I Street, NW—2012.					
"	2014	830	101	1945	25,000.00
"	2018	829	101	1945	25,000.00
"	2038	21	101	1946	50,000.00
"	2106	840	101	1942	10,000.00
"	2112	27	77	1947	11,800.00
"	2136	55-56	77	1947	12,500.00
"	2138	826	77	1948	15,000.00
"	2204	825	77	1945	5,000.00
		22	55	1949	12,000.00
New Hampshire Avenue, NW—905					
		813	40	1949	9,500.00
Pennsylvania Avenue, NW—					
"	1900-02-04-06-08	12-19	119	1949	180,000.00
"	1914-16	812	119	1950	70,000.00
"	1920	813	119	1949	70,000.00
"	2100	800-801-840	75	1945	103,000.00
"	2130	831	75	1950	30,000.00

22nd Street, NW—715	24	1939	8,190.00	.....	8,190.00
"	717	79	10,143.00	.....	10,143.00
"	719	79	20,000.00	.....	20,000.00
"	810	79	8,750.00	.....	8,750.00
"	812-813	79	4,750.00	.....	4,750.00
"	814	79	7,600.00	.....	7,600.00
"	815	79	18,500.00	.....	18,500.00
"	816	55	9,000.00	.....	9,000.00
"	817	55	14,000.00	.....	14,000.00
"	818	55	18,750.00	.....	18,750.00
"	819	77	10,800.00	.....	10,800.00
"	820	77	17,000.00	.....	17,000.00
"	821	55	1,000.00	24,000.00	25,000.00
"	822	55	7,000.00	.....	7,000.00
"	823	55	9,250.00	.....	9,250.00
"	824	75	11,000.00	.....	11,000.00
"	825	75	12,000.00	.....	12,000.00
"	826	75	12,500.00	.....	12,500.00
"	827	75	.....	.....	.....

LAND AND BUILDINGS—(Continued)

For the Year Ended August 31, 1953

Building or Location	Lot	Square	Year Acquired or Erected	Balance August 31, 1952	Net Additions	Balance August 31, 1953
23rd Street, NW—611-13	29-821	57	1948	13,500.00		13,500.00
"	822-824-825	42	1942	3,675.00		3,675.00
"	827	42	1944	7,425.00		7,425.00
"	825	42	1949	11,000.00		11,000.00
"	824	42	1942	4,500.00		4,500.00
"	819	42	1942	3,000.00		3,000.00
"	818	42	1949	17,750.00		17,750.00
"	30	40				
24th Street, NW—737-39	808	42	1947	11,440.00		11,440.00
Less Depreciation—Hospital				16,716,348.76	627,146.60	17,343,495.36
				240,000.00	60,000.00	300,000.00
				16,476,348.76	567,146.60	
TOTAL—EXHIBIT A						17,043,495.36

TRUST NOTES PAYABLE

August 31, 1953

EQUITABLE LIFE ASSURANCE SOCIETY Secured by Nurses Home. Due \$7,875 each May 1 and November 1 including interest at 4%			175,453.87
GARET, AMELIE S. Secured by 2111 H Street, NW. Due \$600 each January 12, April 12, July 12, and October 12. Interest 4%			5,400.00
WASHINGTON LOAN AND TRUST Co. Secured by School of Medicine and Cancer Clinic. Due February 21, 1955. Interest 4%			350,000.00
Secured by Corcoran Hall and Stockton Hall. Due November 3, 1957. Interest 4%			<u>100,000.00</u>
TOTAL—EXHIBIT A			<u>630,853.87</u>

SCHEDULE 8A

EQUIPMENT

For the Year Ended August 31, 1953

	BALANCE August 31, 1952	NET ADDITIONS	BALANCE August 31, 1953
Administration.....	212,036.11	10,776.40	222,812.51
Book Store.....	8,068.30	438.00	8,506.30
Faculty Dining Room.....	2,284.48		2,284.48
George Washington University Cancer Clinic.....	3,205.00		3,205.00
Gymnasium.....	2,927.37		2,927.37
Hospital.....	1,210,161.67	17,731.15	1,227,892.82
Human Resources Laboratory.....	18,340.65	26,766.21	45,106.86
Instruction—General.....	166,626.74	3,782.35	170,409.09
Interns' Residence.....		3,953.12	3,953.12
Law School.....	4,507.56		4,507.56
Library Books—Carnegie.....	75,000.00	959.09	75,959.09
“ “ General.....	145,947.57	13,179.63	159,127.20
“ “ Hospital.....	1,777.51	589.71	2,367.22
“ “ Law School.....	95,775.37	7,585.39	103,360.76
“ “ School of Medicine.....	29,239.05	3,456.55	32,695.60

Lisner Auditorium.....	94,844.28	.....	94,844.28
Lisner Library.....	45,412.16	148.00	45,560.16
Motor Vehicles.....	4,352.01	.....	4,352.01
Nurses Home.....	9,710.60	.....	9,710.60
Residence Hall—2025 H Street, NW.....	2,992.84	.....	2,992.84
School of Engineering.....	82,909.70	2,291.89	85,201.59
School of Medicine.....	79,160.38	6,214.59	85,374.97
School of Pharmacy.....	20,316.11	508.84	20,824.95
Strong Hall.....	18,117.63	.....	18,117.63
Student Union.....	36,406.09	.....	36,406.09
Veterans Housing.....	10,000.00	(-10,000.00)	.....
Welling Hall.....	27,894.87	.....	27,894.87
	<u>2,408,014.05</u>	<u>88,380.92</u>	<u>2,496,394.97</u>
Less Depreciation Hospital Equipment.....	430,800.00	120,000.00	<u>550,800.00</u>
	<u>1,977,214.05</u>	<u>(-31,619.08)</u>	<u>1,945,594.97</u>

TOTAL—EXHIBIT A.....

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Lederle Laboratories.

American Cancer Society—MFT-7A	176.51	1,954.50	1,400.00	554.50	1,954.50
“ “ INSTR-24 C	176.51			176.51	176.51
“ “ INSTR-24 D	3,029.48	(-2,194.28)		835.20	835.20
“ “ INSTR-24 E		25,000.00	16,383.91	6,934.80	23,318.71
“ “ F-127	206.94			206.94	206.94
“ “ F-127-A		500.00		179.78	179.78
“ “ D. C. Division 8	1,184.00	(-993.57)		190.43	190.43
“ “ “ 9		14,965.97	13,650.00	1,315.97	14,965.97
Damon Runyon Clinical Research Fellowship—DRF-79	4.53			4.53	
Damon Runyon Memorial—DRIR-42 A	710.56	(-710.56)			
“ “ DRIR-42-B	4,541.64	(-631.25)	2,324.39	1,586.00	3,910.39
“ “ DRIR-42-C	11,341.81		3,691.10	2,379.26	6,070.36
George Washington University Cancer Clinic	23,538.37	72,745.30	27,632.26	29,945.60	57,577.86
Medical Research Foundation	790.57		675.00	114.07	789.07
Stewart—J—Klopp	23,126.30	25,000.00	18,349.50	7,047.16	25,396.66
“ 2—Bateman	7,037.15		5,699.98	1,097.95	6,797.93
United States Public Health Service—C-391-C5	4,641.16	5,834.84	3,681.50	2,597.99	6,279.49
“ “ “ C-517-C4	9,028.29	(-771.10)	7,701.64	555.55	8,257.19
“ “ “ C-517-C5		25,000.00	14,466.72	2,212.45	16,679.17
“ “ “ C-1234-C	1,518.63	(-1.23)	966.00	549.40	1,515.40
“ “ “ C-1234-C2		3,793.00	2,000.00	646.82	2,646.82
“ “ “ C-70116	752.48			752.48	
HOSPITAL	80,286.61	180,831.43	118,622.00	59,883.39	178,505.39
D. C. Tuberculosis Association	1,908.35				
Marcelle Fleischmann Foundation	720.07	3,400.00	3,193.13	54.60	3,247.73
Smith, Kline, and French Laboratories	54.00				
	2,682.42	3,400.00	3,193.13	54.60	3,247.73
					2,834.69

RESTRICTED CURRENT FUNDS (Continued)
For the Year Ended August 31, 1953
ORGANIZED RESEARCH—(Continued)

Funds	Balance August 31, 1952	Receipts	Disbursements			Balance August 31, 1953
			Salaries	Other Expense	Total	
ENGINEERING						
National Science Foundation		8,000.00	1,800.00	2,001.94	3,801.94	4,198.06
United States Army—DA-49-018-eng-830		18,675.57	12,021.00	6,654.57	18,675.57	
		26,675.57	13,821.00	8,656.51	22,477.51	4,198.06
CHEMISTRY						
Research Corporation—Sager	1,428.90		500.00	3.30	503.30	925.60
" " Norton	120.98	(-45.75)		75.23	75.23	
United States Army—DA-49-007-MD-128		(-3.30)		(-3.30)	(-3.30)	
United States Atomic Energy Commission—AT-30-1-821	2,688.75	4,492.00	4,000.00	816.50	4,816.50	2,364.25
United States Navy—N7onr-419-03		139.02		139.02	139.02	
" " " Nonr-1060-00		5,494.54	3,375.00	2,119.54	5,494.54	
" " " Nonr-15500		246.07	100.00	146.07	246.07	
	4,238.63	10,322.58	7,975.00	3,256.36	11,271.36	3,289.85
HUMAN RESOURCES						
United States Army—DA-44-109-QM-650		1,679,369.19	886,103.90	793,265.29	1,679,369.19	
MATHEMATICS—United States Navy—N7onr-419-04		398,165.08	245,064.61	153,100.47	398,165.08	

Physics

United States Navy—N7ont-419-02
 " " " N7ont-419-06
 " " " NObat-57437

Psychology

Cooper
 Grant Advertising

Miscellaneous

Research Corporation—Perros
 United States Air Force—AF33-038-15977
 " " " AF33-038-27012
 United States Army—DA-49-083-OSA 324
 " " " DA-18-064-CML-2307
 " " " DA 18 108-CML-3000
 United States Navy—Nonr-168-00
 " " " NOp 587
 " " " NOp-644
 " " " Nonr-1021-00
 " " " NOrd-9951
 " " " NOrd-13741

TOTALS—EXHIBIT C

RESTRICTED CURRENT FUNDS (Continued)

For the Year Ended August 31, 1953

INVESTMENT INCOME

Funds	Balance August 31, 1952	Net Income for Year	Disbursements		Balance August 31, 1953
			Current (Operations)	Added to Principal	
ENDOWMENT FUNDS (Schedule 12)					
UNRESTRICTED					
Acker.....		14.16	14.16		
Alumni.....		32.15	31.35	.80	
Campaign.....		8,814.57	8,813.95	.62	
Corcoran.....		10,390.21	10,389.97	.24	
Davis.....		1,962.12	1,961.52	.60	
Durst.....		58.98	58.98		
Goddard.....		1,585.97	1,585.12	.85	
Haggett.....		47.20	47.20		
King.....		906.97	906.47	.50	
Pooler.....		47.20	47.20		
Reichelderfer.....		708.00	708.00		
Sanders.....		99.59	99.59		
Sothern.....		236.00	236.00		
Subscription Gifts.....		591.21	590.77	.44	
Syma.....		70.80	70.80		
Teller.....		4,794.10	4,793.60	.50	
Trustees.....		73.82	72.88	.94	
Weddell.....		472.00	472.00		
Willard Association.....		47.20	47.20		
Withers.....		1,269.28	1,268.74	.54	
Woodhull.....		2,360.00	2,360.00		
			34,575.50		
SCHEDULE 1					

Restricted Fellowship—King	5,613.61	3,555.17	7,630.00	.58	9,168.20
Sanders	136.77	8,967.59			1,494.36
Professorship—Alumni					
Carroll		39.16	38.83	.33	
Congressional	331.81	23.60			355.41
Depew		7,491.07	7,490.11	.96	
Elton		8,051.92	8,051.37	.55	
Fry Funds		684.79	683.98	.81	
Yulee		7,993.48	6,900.00	1,093.48	
	4,363.96	236.00			4,599.96
School of Government—Rankin		4,413.39	4,412.77	.62	
Scottish Rite		47,169.40	47,169.40		
School of Medicine—Bartsch-Dunne					
Borden		46.30	46.30		
Collins		174.95	174.42	.53	
Cooper	728.43	133.48			861.91
Eppley	7,776.73	472.00			8,248.73
Gardner		47.20	47.20		
Lewis		211.77	211.32	.45	
Ruffin		1,524.49	1,524.09	.40	
School of Medicine		2,713.37	2,713.08	.29	
Sharpe		447.93	447.93		
		307.58	307.58		
School of Pharmacy—Gibbs		472.00	472.00		
Miscellaneous—Graduate		667.69	667.69		
Howard	89.06	170.83		.68	259.21
SCHEDULE I			88,988.07		

RESTRICTED CURRENT FUNDS (Continued)

For the Year Ended August 31, 1953

INVESTMENT INCOME (Continued)

Funds	Balance August 31, 1952	Net Income for Year	Disbursements		Balance August 31, 1953
			Current Operations	Added to Principal	
ENDOWMENT FUNDS (Continued)					
Restricted (Continued)					
Hospital—Burton		116.02	116.02		
Chapman		57.86	57.76	.10	
Clephane		47.20	47.20		
General		57.25	57.25		
Houser		118.00	118.00		
Kimmel		144.98	144.68	.30	
Kulibank		63.47		63.47	
Maloney		30.16	30.16		
National Park Seminary		23.60	23.60		
Reinhardt		23.60	23.60		
Strong		1,031.74	1,031.74		
Tree		472.00	472.00		
Woodbury		472.00	472.00		
SCHEDULE 1			2,594.01		
Library—Gladstone					
Heney	9.06	8.26			17.32
Howard	11.59	12.04			23.63
Meyer	1,784.12	472.00	344.21		1,911.91
Noyes	211.95	47.20			259.15
Swisher	1,937.68	472.00	727.37		1,682.31
	832.23	94.40	9.20		917.43
Exhibit G			1,080.78		

Scholarship—Andrews.....	288.95	207.77	150.00	346.72
Bartsch.....	3,451.20	945.56	680.00	
Transferred to Bartsch-Dunne Fund.....				.94
Carr.....	7,393.31	2,294.34	2,706.67	3,036.76
Carter, H. H.....	1,762.81	236.00		.09
Carter, M. M.....	282.57	47.20		
Columbian Women Funds.....				
Brown.....	54.52	56.64	54.52	56.64
Chamberlin.....	104.50	108.56	104.50	108.56
College Women's.....	22.72	23.60	22.72	23.60
Founders of Columbian Women.....	227.18	236.00	227.18	236.00
Herron.....	227.18	236.00	227.18	236.00
Knapp.....	227.18	236.00	227.18	236.00
Wilson.....	45.44	47.20	45.44	47.20
Davis.....	197.75	47.20	60.00	184.95
D.C.—D.A.R.....	306.52	388.21	350.00	344.57
Dorsey.....	361.64	364.48		726.12
Farnham.....	242.57	47.20	70.00	219.77
Fisher.....		38.94		
Hampel.....	63.75	23.60		38.94
Harvey.....	3.53	148.73	100.00	87.35
Hazelton.....	561.82	236.00	200.00	52.26
Kendall.....	270.79	281.29	270.79	597.82
Morehouse.....	588.85	70.80	150.00	280.90
Pearson.....	460.00	134.04		509.65
Powell.....	16,455.60	2,360.00		593.84
Shepard.....	1,589.45	472.00	600.00	18,815.60
Spencer.....	376.49	129.00	150.00	1,461.45
Stone.....	666.53	94.40		355.49
Swisher.....		648.66		760.93
Walker.....	981.42	118.00		390.00
Withington.....	400.03	92.19	125.00	1,099.42
Woodhull.....	119.74	28.32	25.00	366.35
Scholarships Awarded.....			6,546.18	123.06

RESTRICTED CURRENT FUNDS (Continued)

For the Year Ended August 31, 1953

INVESTMENT INCOME (Continued)

Funds	Balance August 31, 1952	Net Income for year	Disbursements		Balance August 31, 1953
			Current Operations	Added to Principal	
ENDOWMENT FUNDS (Continued)					
RESTRICTED FUNDS (Continued)					
Prize—Burns.....	188.60	47.20	60.00		175.80
“ Cowles.....	195.61	141.60	150.00		187.21
“ Croissant.....	77.53	47.20	50.00		74.73
“ Cutter.....	132.09	47.20	60.00		119.29
“ Davis.....	229.95	33.04	60.00		202.99
“ Eesary.....	245.05	141.60	100.00		286.65
“ Evans.....	97.32	56.64	60.00		93.96
“ Fitch.....	250.24	47.20	75.00		222.44
“ Goddard.....	555.94	260.50	300.00		516.44
“ Hubbard.....	126.95	47.20	60.00		114.15
“ Larner.....	107.34	37.76	20.00		125.10
“ Odronaux.....	551.69	236.00	150.00		637.69
“ Ruggles.....	76.27	23.60	35.00		64.87
“ Staughton-Elton.....	141.27	23.60			164.87
“ Sterrett.....	43.27	14.16	17.10		40.33
“ Swisher.....	362.57	47.20	75.00		334.77
“ Walsh.....	457.44	47.20	100.00		404.64
“ Weddell.....	725.27	236.00	300.00		661.27
PRIZES AWARDED.....			1,672.10		
ENDOWMENT NET INCOME.....		146,293.30			

RESTRICTED CURRENT FUNDS—MISCELLANEOUS For the Year Ended August 31, 1953

Funds	Balance August 31, 1952	Additions		Deductions	Balance August 31, 1953
		Gifts	Other		
SCHOLARSHIP, FELLOWSHIP					
Alpha Zeta Omega Pharmaceutical Fraternity	500.00	500.00		Scholarships	500.00
American Foundation Pharmaceutical Education	400.00	200.00		"	200.00
American Society of Women Accountants		100.00			100.00
Dorsey, Charles W.	60.00	420.00			480.00
Freeman and Watts, Drs.	600.00	1,200.00		To Schedule 1	1,200.00
Kappa Psi Fraternity	75.00	75.00			150.00
Kellogg Medical Technology	1,350.00			To Schedule 11	1,350.00
Meyer Foundation	2,500.00	2,500.00		Scholarships	2,500.00
Panhellenic Association		200.00			200.00
President's	950.00			Scholarships	950.00
Soroptimist Club		1,500.00		"	750.00
Tripp, Chester D.	70.00				70.00
Zonta Club		300.00			300.00
Prize					
Alpha Zeta Omega Pharmaceutical Fraternity	63.10	25.00		Prize	22.50
Cannon, Martin L.	25.00	25.00		"	22.50
Chi Omega Sorority		25.00		"	25.00
Delta Zeta Sorority		10.00		"	10.00
Ellsworth		25.00		"	25.00
Kappa Kappa Gamma Sorority		10.00		"	10.00
Pai Chi Sorority		50.00		"	50.00
Sigma Kappa Sorority		10.00		"	10.00
Student Art Show		80.00		"	80.00
Law School—Patent Foundation	37,564.71	26,710.00	387.12	To Schedule 1	64,661.83
" " Sloan Foundation	21,545.90				7,150.59

RELIGION—Milbank Foundation.....	2,500.00	12,500.00	To Schedule 1.....	10,000.00	5,000.00
SCHOOL OF MEDICINE					
Baxter Laboratory—Pharmacology.....	200.00	300.00	To Schedule 1.....	500.00	
Bloedorn, Dr. Walter A.....	1,233.67		To Schedule 1.....	542.94	690.73
Dermatology and Syphilology.....	2,834.25	591.00			3,425.25
Markle Foundation—Dr. McGovern.....	5,166.76	6,000.00	To Schedule 1.....	6,000.00	5,166.76
National Fund for Medical Education.....	6,154.00	38,240.00	To Schedule 1.....	21,379.00	23,015.00
Obstetrics and Gynecology—Film.....	200.29	64.31	Expense.....	195.06	69.54
" " Residents.....	55.33	779.00		30.00	804.33
SCHOOL OF PHARMACY					
D.C. Pharmaceutical Association.....	521.86	3,903.00	To Schedule 1.....	128.71	4,296.15
D. C. Women's Pharmaceutical Auxiliary.....		50.00	To Schedule 1.....	10.35	39.65
Larrick, George P.....	1.98	25.00	To Schedule 1.....	26.98	
SPEECH—National Speech Foundation.....	10.00		To Schedule 1.....	10.00	51.05
" Speech Clinic Foundation.....	500.04	500.00	Expense.....	948.99	
PUBLIC LAW LECTURES—Harryman Dorsey.....	930.84				930.84
KEY DEPOSITS.....	258.00				306.00
TOTALS—EXHIBIT C.....	86,270.73	96,917.31	48.00	60,692.34	122,930.82

SCHEDULE 10B

RESTRICTED CURRENT FUNDS—AGENCY
For the Year Ended August 31, 1953

Funds	Balance August 31, 1952	Deposits	Withdrawals	Balance August 31, 1953
Flower Fund.....	99.35			99.35
Leong Chin Ngen.....		4,000.00		4,000.00
R.O.T.C.....	34.75	148.00	112.92	69.83
Swisher History Club.....	120.75		120.75	
Transferred to Schedule 12.....	(-1,787.95)	10,015.42	7,187.39	1,040.08
Women's Board Courier.....	10,300.11	27,246.98	23,727.54	13,819.55
Women's Board Gift Shop.....	970.00		970.00	
Women's Board Lecture Series.....	50.00	65.00		115.00
Women's Board Memorial.....	9,787.01	41,475.40	32,118.60	19,143.81

CHANGES IN PRINCIPAL OF LOAN FUNDS

For the Year Ended August 31, 1953

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FUNDS	Balance August 31, 1952	Additions			Refunded to U. S. Government	Balance August 31, 1953
		Gifts	Interest on Loans	Transferred from Schedule 10B		
D. C.—D. A. R. Loan Fund.....	90.40					90.40
George Washington Law Association Loan Fund.....	811.42		11.00			822.42
Harris Loan Fund.....	400.00					400.00
Home Economics Loan Fund.....	382.35					382.35
Kellogg Loan Fund.....	16,717.16		296.76	1,350.00		18,363.92
Pfizer Loan Fund.....		1,000.00				1,000.00
School of Medicine Loan Fund.....	531.26	609.52				1,140.78
Sutherland Loan Fund.....	1,360.00					1,360.00
University Loan Fund.....	8,268.94		105.72			8,374.66
War Loan Fund.....	5,545.70				297.23	5,248.47
TOTALS—EXHIBIT D.....	34,107.23	1,609.52	413.48	1,350.00	297.23	37,183.00

SCHEDULE 11

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS

For the Year Ended August 31, 1953

Funds	Balance August 31, 1952	Additions			Deductions	Balance August 31, 1953
		Gifts	Investment Income	Other		
UNRESTRICTED						
Acher.....	300.00	.....	.....	.....	.....	300.00
Alumai.....	681.20	.....	.80	.....	.....	682.00
Campaign.....	186,749.38	.....	.62	.....	.....	186,750.00
Corcoran.....	220,155.76	.....	.24	.....	.....	220,156.00
Davis.....	41,570.40	.....	.60	.....	.....	41,571.00
Durst.....	.....	2,000.00	.....	.....	.....	2,000.00
Goddard.....	33,601.15	.....	.83	.....	.....	33,602.00
Haggett.....	1,000.00	.....	.....	.....	.....	1,000.00
King.....	19,215.50	.....	.50	.....	.....	19,216.00
Poole.....	1,000.00	.....	.....	.....	.....	1,000.00
Reicheiderfer.....	15,000.00	.....	.....	.....	.....	15,000.00
Sanders.....	2,110.00	.....	.....	.....	.....	2,110.00
Sothern.....	5,000.00	.....	.....	.....	.....	5,000.00
Subscription Gifts	12,525.56	.....	.44	.....	.....	12,526.00
Syms.....	1,500.00	.....	.....	.....	.....	1,500.00
Teller.....	21,192.14	115,785.36	.50	.....	.....	136,978.00
Trustees.....	1,564.06	.....	.94	.....	.....	1,565.00
Weddell.....	10,000.00	.....	.....	.....	.....	10,000.00
Willard Association.....	1,000.00	.....	.....	.....	.....	1,000.00
Withers.....	26,891.46	.....	.54	.....	.....	26,892.00
Woodhull.....	50,000.00	.....	.....	.....	.....	50,000.00

FELLOWSHIP

Net loss on sale of investments.

Alumni

Fry (controlled by National Savings and Trust Co.)

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1953

Funds	Balance August 31, 1952	Additions			Deductions	Balance August 31, 1953
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
School						
Government						
Rankin.....	150,000.00	129,704.38	.62			279,705.00
Scottish Rite.....	1,000,000.00					1,000,000.00
Medicine						
Bartsch-Dunne—income of Bartsch Scholarship Fund..			3,036.76			3,036.76
Borden.....	3,705.47		.53			3,707.00
Collins.....	2,828.00					2,828.00
Cooper.....	10,000.00					10,000.00
Fippley.....	1,000.00					1,000.00
Gardner.....	4,486.55		.45			4,487.00
Lewis.....	32,298.60		.40			32,299.00
Ruffin.....	57,486.71		.29			57,487.00
School of Medicine	9,356.00	980.00				10,336.00
Sharpe.....	8,207.40					8,207.40
Pharmacy						
Gibbs.....	10,000.00					10,000.00

MISCELLANEOUS					
Graduate.....	13,959.57	587.00			14,546.57
Howard.....	3,619.32		.68		3,620.00
HOSPITAL					
Burton.....	1,000.00	1,500.00			2,500.00
Chapman.....	1,225.90		.10		1,226.00
Clephane.....	1,000.00				1,000.00
General.....	1,210.00	5.00			1,215.00
Houser.....	2,500.00				2,500.00
Kimmel.....	3,071.70		.30		3,072.00
Kuhlbank.....	1,344.72		63.47		1,408.19
Maloney.....		1,000.00			1,000.00
National Park Seminary.....	500.00				500.00
Reinhardt.....	500.00				500.00
Strong.....	15,000.00				15,000.00
Tree.....	10,000.00				10,000.00
Woodbury.....	10,000.00				10,000.00
LIBRARY					
Gladatone.....	175.00				175.00
Heney.....	255.00				255.00
Howard.....	10,000.00				10,000.00
Meyer.....	1,000.00				1,000.00
Noyes.....	10,000.00				10,000.00
Swisher.....	2,000.00				2,000.00
Transferred from Schedule 10.....				120.75	2,120.75

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1953

Funds	Balance August 31, 1952	Additions			Deductions	Balance August 31, 1953
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
SCHOLARSHIP						
Andrews.....	5,194.03					5,194.03
Bartsch.....	20,033.06		.94			20,034.00
Carr.....	48,608.91		.09			48,609.00
Carter, H. H.....	5,000.00					5,000.00
Carter, M. M.....	1,000.00					1,000.00
Columbian Women Funds						
Brown.....	1,200.00					1,200.00
Chamberlin.....	2,300.00					2,300.00
College Women's.....	500.00					500.00
Founders of Columbian Women.....	5,000.00					5,000.00
Herron.....	5,000.00					5,000.00
Knapp.....	5,000.00					5,000.00
Wilson.....	1,000.00					1,000.00

Davis.....	1,000.00								1,000.00
D. C.—D. A. R.	8,224.84								8,225.00
Dorsey.....	7,000.00						.16		8,000.00
Farnham.....	1,000.00			1,000.00					1,000.00
Fisher.....	824.99						38.94		863.93
Hampel.....	500.00								500.00
Harvey.....	5,031.97								
Loss on sale of investments.....								400.00	
Hazelton.....	5,000.00								4,631.97
Kendall.....	5,959.61						.39		5,000.00
Morchouse.....	1,500.00								5,960.00
Pearson.....	2,839.80						.20		1,500.00
Powell.....	50,000.00								2,840.00
Shepard.....	10,000.00								50,000.00
Spencer.....	7,434.20								10,000.00
Stone.....	2,000.00								7,434.20
Swisher.....	12,674.09			200.00			258.66		2,000.00
Walker.....	2,500.00								13,132.75
Withington.....	1,953.13						.87		2,500.00
Woodhull.....	600.00								1,954.00
									600.00

CHANGES IN PRINCIPAL OF ENDOWMENT FUNDS (Continued)

For the Year Ended August 31, 1953

Funds	Balance August 31, 1952	Additions			Deductions	Balance August 31, 1953
		Gifts	Investment Income	Other		
RESTRICTED (Continued)						
Prize						
Burns.....	1,000.00					1,000.00
Cowles.....	3,000.00					3,000.00
Croissant.....	1,000.00					1,000.00
Cutter.....	1,000.00					1,000.00
Davis.....	700.00					700.00
Essary.....	3,000.00					3,000.00
Evans.....	1,200.00					1,200.00
Fitch.....	1,000.00					1,000.00
Goddard.....	5,519.00					5,519.00
Hubbard.....	1,000.00					1,000.00
Larner.....	800.00					800.00
Mahler.....		100.00				100.00

Ordonaux.....	5,000.00	.....	.....	.....	.....	.....	5,000.00
Ruggles.....	500.00	.....	.....	.....	.....	.....	500.00
Staughton-Elton.....	500.00	.....	.....	.....	.....	.....	500.00
Sterrett.....	300.00	.....	.....	.....	.....	.....	300.00
Swisher.....	1,000.00	.....	.....	.....	.....	.....	1,000.00
Walsh.....	1,000.00	.....	.....	.....	.....	.....	1,000.00
Weddell.....	5,000.00	.....	.....	.....	.....	.....	5,000.00
	3,056,912.17	252,861.74	4,506.59	1,094.43	638.76	3,314,736.17	
RESERVES FOR PROTECTION OF INVESTMENTS							
Consolidated Endowment Funds..	85,559.23	.....	.....	.....	.....	.....	85,559.23
Gain on sale of investments .....	.....	.....	.....	302.74	.....	.....	.....
Scottish Rite Fund	61,859.63	.....	.....	.....	.....	.....	61,859.63
Net loss on sale of investments .....	.....	.....	.....	.....	6,039.49	.....	55,820.14
	3,204,331.03	252,861.74	4,506.59	1,397.17	6,678.25	3,456,418.28	
TOTALS—EXHIBIT E							

CHANGES IN PRINCIPAL OF PLANT FUNDS For the Year Ended August 31, 1953

Fund	Balance August 31, 1952	Additions			Deductions	Balance August 31, 1953
		Gifts	Investment Income	Other		
PLANT ADDITIONS						
Davis-Hodgkins House Equipment		134.50	.80			135.30
Field House	201.40		7.37			208.77
Hospital Equipment		575.00			575.00	
General						
Equipment purchased		1,245.00				1,245.00
Littell Nursery		100.00				100.00
Prenatal Nursery		1,524.05		1,631.91	940.98	2,215.00
Women's Board Gift Shop						
Transferred from Exhibit B						
Equipment purchased		96.10	318.55			9,100.01
Law School Expansion	8,685.36					
Library Books						
American Diplomatic History	82.00				18.00	64.00
Books purchased		1.52			1.52	
Book						
Book purchased	405.50					405.50
Brooklyn Alumni Club	50.00					50.00
Chase, Ruth Judith	58.75					58.75
Class of 1945	328.81					
Council of Religious Organizations					3.15	325.66
Book purchased	25.00					25.00
Davis, Harry C.	1,000.00					1,000.00
Ellison						
George, Carlotta						
Books purchased		130.00			64.82	65.18
Hellenic Society	225.00					225.00

Henney	100.00	5.00			5.00
Herbst, Louise C.	17.84				100.00
Hospital	7.02				17.84
Lincoln Ave. Welding Foundation	9.80				7.02
Mundack, Mrs. James O.	4,278.52				9.80
Noyes, Theodore	6.79				4,278.52
P. L. Baskin	58.23			6.79	
Books purchased					
Rosen, Dr. John N.					
Marion M. Bond and Mary A. Wood Memorial					58.23
Paio	2,000.00				2,000.00
School of Engineering Building	113,932.91				113,932.91
School of Medicine Building	298,498.08				366,309.55
Warwick Memorial Building	1,916.34		70.17		1,986.51
U. S. Public Health Service					
Washington Home for Foundlings	200,000.00				78,605.48
Construction	255,915.75				13,126.71
Women's Activities Building	5,482.75		200.76		5,683.51
Women's Board Gift Shop Equipment	79.17			79.17	
Transferred to Women's Board Courier					
RESERVE FOR PROTECTION OF INVESTMENTS	435,450.79	517,155.01	12,979.51	1,631.93	601,344.25
	6,373.26				6,373.26
TOTALS—EXHIBIT F	441,824.05	517,155.01	12,979.51	1,631.93	607,717.51

For the Year Ended August 31, 1953

CURRENT FUNDS		
UNRESTRICTED—SCHEDULE 1		1,009.95
National Radio Institute.		9.95
Estate of Susan Whitney Dimock.		
RESTRICTED—GENERAL—SCHEDULE 1		
Alumni Office—General Alumni Association.	100.00	
Biochemistry—Baxter Laboratory.	900.00	
Library—Anonymous.	3,000.00	
School of Medicine—Dr. Ronald Cox.	147.75	4,147.75
RESTRICTED—HOSPITAL—SCHEDULE 1—various donors.		1,440.00
RESTRICTED—ORGANIZED RESEARCH—SCHEDULE 10—various donors.		2,899,240.06
RESTRICTED—SCHEDULE 10B		
Scholarship—Fellowship—various donors.	6,995.00	
Prize—various donors.	260.00	
Law School—Patent Foundation.	26,710.00	
Department of Religion—Milbank Foundation.	12,500.00	
School of Medicine—Baxter Laboratory.	300.00	
" " " " " "	591.00	
" " " " " "	6,000.00	
" " " " " "	38,240.00	
" " " " " "	64.31	
" " " " " "	779.00	
" " " " " "	3,903.00	
School of Pharmacy—D. C. Pharmaceutical Association.	50.00	
" " " " " "	25.00	
" " " " " "		
Speech Department—Speech Clinic Foundation.	96,917.31	3,002,755.07

TOTAL.....	3,774,381.34
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DESCRIPTION OF LOAN FUNDS

August 31, 1953

DISTRICT OF COLUMBIA D. A. R. LOAN FUND—Created in 1938 from income of the D. C.—D. A. R. Endowment Fund. To be loaned to descendants of patriots of the American Revolution	90.40
GEORGE WASHINGTON LAW ASSOCIATION LOAN FUND—Created in 1941 by the George Washington Law Association to be loaned to students of the Law School	822.42
HARRIS LOAN FUND—Created in 1950 by gift of George W. Harris to be loaned to an orthoptic technician student	400.00
HOME ECONOMICS LOAN FUND—Created in 1940 by the D. C. Home Economics Association to be loaned to senior girls majoring in home economics	382.35
KELLOGG LOAN FUND—Created in 1942 by the W. K. Kellogg Foundation to be loaned to students of the School of Medicine	18,363.92
PFIZER LOAN FUND—Created in 1953 by Chas. Pfizer and Co., Inc., to be loaned to students of the School of Medicine	1,000.00
SCHOOL OF MEDICINE LOAN FUND—Created in 1952 by School of Medicine students to be loaned to students of the School of Medicine	1,140.78
SUTHERLAND LOAN FUND—Created in 1941 by Rose L. Sutherland and other donors, to be loaned to students of the School of Medicine	1,360.00
UNIVERSITY LOAN FUND—Created in 1928 by the University to make short time loans for educational purposes	8,374.66
WAR LOAN FUND—Created in 1942 by the United States Government to be loaned to students in technical and professional fields of national defense	5,248.47

DESCRIPTION OF ENDOWMENT FUNDS

August 31, 1953

UNRESTRICTED FUNDS

ACKER FUND—Bequest of George N. Acker, M. D., received in 1924, the income to be used as required.....	300.00
ALUMNI ENDOWMENT FUND—Created by the Class of 1920, to be added to by succeeding graduating classes, the income to be used as required.....	682.00
CAMPAIGN FUND—Created in 1923 by various donors, the income to be used as required.....	186,750.00
CORCORAN FUND—Gift of William W. Corcoran of \$112,000 and gifts of other donors between the years 1871-86, the income to be used as required.....	220,156.00
DAVIS FUND—Bequest of Harry C. Davis, received in 1946, the income to be used as required.....	41,571.00
DURST FUND—Created in 1953 by Dr. Sidney C. Durst in memory of his wife, Clara Saunders Durst, the income to be used as required.....	2,000.00
GODDARD ENDOWMENT FUND—Bequest of Frederick J. Goddard, received in 1949, the income to be used as required..	33,602.00
HAGGETT FUND—Created in 1941 by Isabelle Barnes Haggett, the income to be used as required.....	1,000.00
KING, W. B., FUND—Created in 1941 by William B. King, the income to be used as required.....	19,216.00
POOLE FUND—Bequest of George Poole in 1951, the income to be used as required.....	1,000.00
REICHELDERFER FUND—Created by Mary M. Reichelderfer in 1945 in memory of her husband, Luther H. Reichelderfer, the income to be used as required.....	15,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1953

UNRESTRICTED FUNDS (Continued)

SANDERS ENDOWMENT FUND—Created by J. Sanders in 1945, the income to be used as required.....	2,110.00
SOTHERN FUND—Bequest of Julia Marlowe Sothern, received in 1951, the income to be used as required.....	5,000.00
SUBSCRIPTION GIFTS FUND—Created by various donors during the years 1845-51, the income to be used as required. (Formerly called the Poindexter Endowment Fund).....	12,526.00
SYMS FUND—Bequest of Samuel Syms in 1891, the income to be used as required.....	1,500.00
TELLER FUND—Bequest of John D. Teller and Mary L. Teller, received in 1949, the income to be used as required..	136,978.00
TRUSTEES FUND—Created by the Board of Trustees of the University in 1932, the income to be used as required....	1,565.00
WEDDELL FUND—Created in 1948 by bequests of Alexander W. Weddell and Virginia Chase Weddell, the income to be used as required.....	10,000.00
WILLARD ASSOCIATION FUND—Gift of the Willard Association in 1950, the income to be used as required.....	1,000.00
WITHERS FUND—Gift of John Withers of \$16,000 and gifts of various donors during the years 1851-70, the income to be used as required. (Formerly called the Forty Thousand Dollar Endowment Fund).....	26,892.00
WOODHULL FUND—Bequest of Margaret Willett Woodhull, received in 1946, the income to be used as required.....	50,000.00

King Fellowship Fund—Created in 1928 by bequest of Isabella Osborn King, the income to be used for a fellowship in biology..... 75,322.00

Sanders Fellowship Fund—Bequest of Addie Sanders in 1928 in memory of her brother, Thomas Bradford Sanders, the income to be used for fellowships in various academic fields of study..... 205,977.38

PROFESSORSHIP FUNDS

Alumni Professorship Fund—Gifts of various alumni since 1911, the income to be used for an alumni professorship in mathematics..... 830.00

Carroll Professorship Fund—Created by Mary A. Sharpe in 1928 in memory of Mitchell Carroll, the income to be used for a chair in archeology..... 500.00

Congressional Professorship Fund—Created in 1832 by gift of the United States of America by Act of Congress, the income to be used for professorships..... 158,710.00

Depew Course in Public Speaking Fund—Created by May Depew in 1936, the income to be used for a course to be known as the "Chauncey M. Depew Course in Public Speaking"..... 170,592.00

Elton Professorship Fund—Bequest of Romeo Elton of Exeter, England, in 1872, the income to be used for a professorship to be called the "Elton Professorship of Mental and Moral Philosophy"..... 14,509.00

Fry Professorship Funds—Bequest of Annabel Lee Fry, received in 1945, in memory of her husband, Dr. Henry D. Fry, the income to be used for a professorship in physiology..... 106,061.45

Created in 1945 from income of the original fund, the income of the two funds to be used for a professorship in physiology..... 34,056.79

Yulee Endowment Fund—Bequest of Nannie Yulee Noble in 1929 in memory of her mother, Nancy Yulee, the income to be used for lectures in home economics..... 5,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1953

SCHOOL FUNDS

GOVERNMENT

RANKIN ENDOWMENT FUND—Bequest of John O. Rankin, received in 1951, the income to be used for the School of Government..... 279,705.00

SCOTTISH RITE ENDOWMENT FUND—Created in 1928 by the Supreme Council of the Ancient and Accepted Scottish Rite of Freemasonry of the Southern Jurisdiction of the United States of America, as a permanent memorial to George Washington, The Mason, the income to be used to maintain a School of Government..... 1,000,000.00

MEDICAL

BARTSCH-DUNNE RESEARCH FUND—Created in 1952 by Dr. Anna Bartsch-Dunne from income of the Bartsch Scholarship Fund, the income to be used for research in medicine..... 3,036.76

BORDEN MEDICAL FUND—Created in 1932 by William Cline Borden, M. D., and Jennie Ella Borden, the income to be used for the School of Medicine..... 3,707.00

COLLINS MEMORIAL RESEARCH FUND—Created in 1946 by various donors in memory of Dr. James Lloyd Collins, the income to be used for special research in surgery..... 2,828.00

COOPER MEDICAL RESEARCH FUND—Bequest of Eleanor J. Cooper in 1905, on certain terms since modified by the Supreme Court of D. C. as follows: the income to be used toward the establishment and maintenance, in connection with the Medical Department of the University, of a Research Laboratory, the work of this laboratory to be devoted to the investigation of the nature, causation, prevention, and cure of malaria and other infectious and contagious diseases..... 10,000.00

EPPLEY MEDICAL SCHOOL FUND—Bequest of Mary V. Eppley, received in 1951, the income to be used for cancer research in the School of Medicine.....	1,000.00
GARDNER MEDICAL SCHOOL FUND—Bequest of William D. Gardner, received in 1928, the income to be used for the School of Medicine.....	4,487.00
LEWIS MEDICAL SCHOOL FUND—Bequest of Samuel E. Lewis, received in 1925, the income to be used for the School of Medicine.....	32,299.00
RUFFIN MEDICAL SCHOOL FUND—Bequest of Dr. Sterling Ruffin in 1951, the income to be used for the School of Medicine.....	57,487.00
SCHOOL OF MEDICINE ENDOWMENT FUND—Created in 1940 by various donors, the income to be used for the School of Medicine.....	10,336.00
SHARPE MEDICAL SCHOOL FUND—Created by Mary A., Elizabeth M., and Sallie Sharpe in 1924, the income to be used for the School of Medicine.....	8,207.40

PHARMACY

GIBBS PHARMACY FUND—Created by M. G. Gibbs in 1927, the income to be used to aid in establishing and maintaining a commercial pharmacy course in connection with the School of Pharmacy.....	10,000.00
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DESCRIPTION OF ENDOWMENT FUNDS

August 31, 1953

MISCELLANEOUS FUNDS

GRADUATE ENDOWMENT FUND—Created by the Class of 1926, to be used for the acquisition of sites, erection of buildings, and maintenance and purchase of equipment. Only the income may be used until Fund reaches \$50,000 when income, and principal over \$50,000, may be used.....	14,546.57
HOWARD LECTURE FUND—Created in 1952 by Frank A. Howard, the income to be used for lectures on engineering.....	3,620.00

HOSPITAL FUNDS

BURTON HOSPITAL FUND—Created by Grace C. Burton in 1950, the income to be used for medicine for indigent persons.	2,500.00
CHAPMAN HOSPITAL FUND—Bequest of Mrs. Susanna A. Chapman in 1911, the income to be used for the purposes of the free wards of the hospital.....	1,226.00
CLEPHANE HOSPITAL FUND—Gift in 1951 of Washington Alumnae of Zeta Tau Alpha Sorority, in memory of Beatrice A. Clephane, the income to be used for the hospital.....	1,000.00
GENERAL HOSPITAL FUND—Created in 1929 by various donors, the income to be used for the hospital.....	1,215.00
HOUSER HOSPITAL FUND—Bequest of E. Keller Houser, received in 1944, the income to be used to endow a room in memory of his daughter, Anna Victoria Houser.....	2,500.00
KIMMEL HOSPITAL FUND—Bequest of Annie Kimmel, received in 1932, the income to be used for the hospital.....	3,072.00
KUHLBANK HOSPITAL FUND—Bequest of Freda Kuhlbank, received in 1930, the income to be added to the principal until the principal shall be large enough to maintain a bed in the White Ward of the hospital to be known as the "Freda Kuhlbank Bed".....	1,408.19

<i>Maloney Hospital Fund—Created in 1952 by the Maloney Concrete Co., the income to be used for the hospital.</i>	1,000.00
<i>NATIONAL PARK SEMINARY HOSPITAL FUND—Gift of students of National Park Seminary of Forest Glen, Maryland, in 1906, the income to be used toward the maintenance of a bed in the hospital.</i>	500.00
<i>REINHARDT HOSPITAL FUND—Bequest of Luisa Wynne Reinhardt in 1922, the income to be used for the hospital.</i>	500.00
<i>STRONG HOSPITAL FUND—Gift of estate of Hattie M. Strong in 1952, the income to be used for the hospital.</i>	15,000.00
<i>TREE HOSPITAL FUND—Created in 1911 by bequest of Lambert M. Tree, in memory of his mother, Mrs. Laura M. Tree, the income to be used to maintain a bed in the hospital, to be known as the "Laura M. Tree Bed".</i>	10,000.00
<i>WOODBURY HOSPITAL FUND—Bequest of Ellen DeQ. Woodbury in 1909, the income to be used for the reception and treatment of female patients in the hospital.</i>	10,000.00

LIBRARY FUNDS

<i>GLADSTONE LIBRARY FUND—Gift of Ethel S. Gladstone in 1951, the income to be used to purchase books for the Library.</i>	175.00
<i>HENSEY LIBRARY FUND—Gift of D. C. Masonic Clubs in 1951, the income to be used to purchase books for the Library.</i>	255.00
<i>HOWARD LIBRARY FUND—Gift of Colonel Deane Childs Howard in 1943 in memory of Captain Deane Childs Howard, Jr., the income to be used to purchase books for the Library.</i>	10,000.00
<i>MEYER LIBRARY FUND—Gift of Eugene Meyer in 1944, the income to be used to purchase books for the Library.</i>	1,000.00
<i>NOYES LIBRARY FUND—Bequest of Theodore W. Noyes, received in 1947, the income to be used to purchase books for the Library.</i>	10,000.00
<i>SWISHER ALCOVE BOOK FUND—Gift of Dr. Charles Clinton Swisher in 1941, in trust for the Historical Society of the University, the income to be used to purchase books for the Swisher Alcove in the Library.</i>	2,120.75

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1953

SCHOLARSHIP FUNDS

ANDREWS MEMORIAL SCHOLARSHIP FUND—Gift of Belle Fisk Andrews in 1920 in memory of her husband, Byron Andrews, the income to be used for scholarships "for ambitious and needy students of English, Latin, journalism, history, literature, or political science"	5,194.03
BARTSCH SCHOLARSHIP FUND—Created by Dr. Anna Bartsch-Dunne in 1946, the income to be used for a scholarship for a woman in the School of Medicine and an internship for a woman in the University Hospital	20,034.00
CARR SCHOLARSHIP FUND—Created by bequest of Emma K. Carr in 1932, the income to be used for scholarships for young white men	48,609.00
CARTER, H. H., SCHOLARSHIP FUND—Gift of Maria M. Carter in 1896 in memory of her husband, Henry Harding Carter, the income to be used for scholarships in civil engineering	5,000.00
CARTER, M. M., SCHOLARSHIP FUND—Gift of Maria M. Carter in 1871, the income to be used for scholarships for young men	1,000.00

COLUMBIAN WOMEN SCHOLARSHIP FUNDS

BROWN SCHOLARSHIP FUND—Created by the College Women's Club of Washington, D. C., in 1925, in memory of Elizabeth V. Brown, the income to be used for scholarships in the School of Education	1,200.00
CHAMBERLIN SCHOLARSHIP FUND—Created by the Columbian Women of The George Washington University in 1932 in memory of Grace Ross Chamberlin, the income to be used for scholarships for young women	2,300.00
COLLEGE WOMEN'S SCHOLARSHIP FUND—Gift of the College Women's Club of Washington, D. C., in 1926, the income to be used for scholarships	500.00
FOUNDERS OF COLUMBIAN WOMEN SCHOLARSHIP FUND—Created by the Columbian Women of The George Washington University in 1920, the income to be used for scholarships for women in Columbian College	5,000.00
HERRON SCHOLARSHIP FUND—Created by the Columbian Women of The George Washington University in 1925 in memory of Lillian Young Herron, the income to be used for scholarships for women in Columbian College	5,000.00
KNAPP SCHOLARSHIP FUND—Gift of the Columbian Women of The George Washington University in 1915 in memory of Nellie Maynard Knapp, the income to be used for scholarships for women	5,000.00
WILSON SCHOLARSHIP FUND—Gift of Elizabeth Wilson in 1926 in memory of her parents, Lewes D. and Myrtie H. Wilson, the income to be used for scholarships in the School of Medicine	1,000.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1953

SCHOLARSHIP FUNDS (Continued)

DAVIS SCHOLARSHIP FUND—Gift of Isaac Davis in 1869, the income to be used for scholarships.....	1,000.00
D. C.—D. A. R. SCHOLARSHIP FUND—Created in 1952 by the D. C.—D. A. R., the income to be used for scholarships for descendants of patriots of the American Revolution.....	8,225.00
DORSEY SCHOLARSHIP FUND—Created in 1947 by Harryman Dorsey in memory of Charles Worthington Dorsey, the income to be used for scholarships.....	8,000.00
FARNHAM SCHOLARSHIP FUND—Gift of Mrs. Robert Farnham in 1871, the income to be used for scholarships in Columbian College.....	1,000.00
FISHER SCHOLARSHIP FUND—Bequest of Esther Brigham Fisher, received in 1951, the income to be added to principal until principal reaches \$1,000.00, after which the income shall be used for scholarships.....	863.93
HAMPTEL SCHOLARSHIP FUND—Gift of Evelyn Hampel Young in 1948 in memory of her mother, Anna Spickel Hampel, the income to be used for Scholarships for married women in the School of Education or Columbian College.....	500.00
HARVEY SCHOLARSHIP FUND—Bequest of Emma Elizabeth Harvey, received in 1923, in memory of her daughter, Elma Lewis Harvey, the income to be used for scholarships in Columbian College for young women of the Protestant faith and of the Caucasian race.....	4,631.97
HAZELTON SCHOLARSHIP FUND—Bequest of Lillie S. Hazelton, received in 1950, the income to be used for scholarships...	5,000.00
KENDALL SCHOLARSHIP FUND—Gift of Amos Kendall in 1869, the income to be used for a scholarship now designated by the Board of Trustees as one of the two High School Scholarships assigned to Central High School.....	5,960.00
MOREHOUSE SCHOLARSHIP FUND—Created by A. Morehouse in 1861, the income to be used for scholarships for undergraduates intending to enter the Christian ministry.....	1,500.00

PEARSON SCHOLARSHIP FUND—Bequest of Paul Pearson, received in 1944, the income to be used for scholarships in the School of Pharmacy.....	2,840.00
POWELL SCHOLARSHIP FUND—Created by Levin M. Powell in 1886, the income to be used to train young men for entrance in the United States Naval Academy or to fit them to become mates and masters in the Merchant Marine Service of the United States.....	50,000.00
SHEPARD SCHOLARSHIP FUND—Bequest of Lula M. Shepard, received in 1946, the income to be used for scholarships in the School of Government.....	10,000.00
SPENCER SCHOLARSHIP FUND—Created by Louisa J. Spencer in 1918, the income to be used for scholarships.....	7,434.20
STONE SCHOLARSHIP FUND—An anonymous gift in 1893 in memory of Mary Lowell Stone, the income to be used for scholarships for women students of science in Columbian College.....	2,000.00
SWISHER SCHOLARSHIP FUND—Created by Dr. Charles Clinton Swisher in 1941, the income to be used to award scholarships in Medieval History.....	13,132.75
WALKER SCHOLARSHIP FUND—Gift of William Walker in 1824, the income to be used for scholarships for undergraduates intending to enter the Christian ministry.....	2,500.00
WITHINGTON SCHOLARSHIP FUND—Gift of the New York Baptist Theological Seminary in 1830, on behalf of John Withington, the income to be used for scholarships.....	1,954.00
WOODHULL SCHOLARSHIP FUND—Bequest of Ellen M. E. Woodhull, received in 1921, the income to be used for scholarships in Columbian College.....	600.00

DESCRIPTION OF ENDOWMENT FUNDS (Continued)

August 31, 1953

PRIZE FUNDS

BURNS MEMORIAL AWARD FUND—Gift of Persia Burns in 1937 in memory of her son, Byrne Thurtell Burns, the income to be used for an annual award in chemistry.	1,000.00
COWLES PRIZE FUND—Created in 1943 by John Henry Cowles, the income to be used for annual awards in the School of Government.	3,000.00
CROISSANT PRIZE AWARD—Bequest of DeWitt Clinton Croissant, received in 1941, the income to be used to award an annual prize for excellence in dramatics or dramatic studies.	1,000.00
CUTTER PRIZE FUND—Gift of Marion Kendall Cutter in 1902, in memory of E. K. Cutter, the income to be used for an annual award for excellence in the study of English.	1,000.00
DAVIS PRIZE FUND—Gift of Isaac Davis in 1847, the income to be used for annual awards to members of the senior class who have made the greatest progress in elocution since their connection with the University.	700.00
ESSARY PRIZE FUND—Gift of Helen Essary Murphy in 1948 in memory of her late husband, Jesse Frederick Essary, the income to be used for an annual award in journalism.	3,000.00
EVANS MEMORIAL AWARD FUND—Created in 1937 by friends of Joshua Evans III, the income to be used to establish a prize, as a memorial to an "outstanding life," to be awarded annually "to that man in the graduating class who has demonstrated his signal ability in the social and political sciences and who has given promise of the interpretation of that ability in good citizenship among his fellows."	1,200.00
FITCH PRIZE FUND—Gift of James E. Fitch in 1883 in memory of Willie E. Fitch, the income to be used for an annual award to a senior student for the best general examination in chemistry.	1,000.00
GODDARD PRIZE FUND—Gifts of Mary W. Goddard, Alice Douglas Goddard, and Frederick J. Goddard, in 1923, in memory of Morgan Richardson Goddard, Edward Carrington Goddard, and James Douglas Goddard; added to in 1941 by a gift of Frederick J. Goddard in memory of Alice Douglas Goddard. The income shall be used to award four cash prizes annually to the students making the highest averages in commerce, French language and literature, pharmacy, and American literature, respectively.	5,519.00
HUBBARD PRIZE FUND—Gift of Gertrude M. Hubbard in 1907 in memory of her husband, Gardiner G. Hubbard, the income to be used for an annual award for excellence in American history.	1,000.00

<i>LARNER PRIZE FUND</i> —Bequest of John B. Larnet in 1933, the income to be used for an annual award in the Law School.	800.00
<i>MAHLER PRIZE FUND</i> —Gift of Martin Mahler in 1953, the income to be used for the "Martin Mahler Prize in Materials Testing"	100.00
<i>ORDRONAUX PRIZE FUND</i> —Bequest of John Ordronaux in 1909, the income to be used for annual awards in the Law and Medical schools.	5,000.00
<i>RUGGLES PRIZE FUND</i> —Gift of William Ruggles in 1859, the income to be used for an annual award for excellence in mathematics.	500.00
<i>STAUGHTON-ELTON PRIZE FUND</i> —Created by gift of Romeo Elton of Exeter, England, in 1860, the income to be used for annual awards for excellence in the Latin and Greek languages, one to be called the Staughton Prize in Latin, the other the Elton Prize in Greek.	500.00
<i>STERRETT PRIZE FUND</i> —Gift of the Reverend J. MacBride Sterrett in 1911 in memory of his son, J. MacBride Sterrett, Jr., the income to be used for books to be awarded annually to the student obtaining the highest average in general physics.	300.00
<i>SWISHER PRIZE FUND</i> —Gift of Charles Clinton Swisher in 1941, the income to be applied yearly to enlarging the sum set apart for the Historical Prize established in his name by the Historical Club, December 7, 1936.	1,000.00
<i>WALSH PRIZE FUND</i> —Gift of Thomas F. Walsh in 1901, the income to be used for an annual award for the best essay on some topic in Irish history.	1,000.00
<i>WEDDELL PRIZE FUND</i> —Gift of Virginia Chase Weddell in 1923, the income to be used to award annually the Alexander Willbourne Weddell Prize to the student submitting the best essay upon the general subject of the promotion of peace among the nations of the world.	5,000.00

RESERVES FOR PROTECTION OF INVESTMENTS OF ENDOWMENT FUNDS

<i>RESERVE FOR PROTECTION OF CONSOLIDATED ENDOWMENT FUNDS INVESTMENTS</i> —Created from gains arising from the sale of investments and a portion of the net income of Consolidated Endowment Funds Investments.	85,861.97
<i>RESERVE FOR PROTECTION OF SCOTTISH RITE ENDOWMENT FUND INVESTMENTS</i> —Created from gains arising from the sale of Scottish Rite Investments.	55,820.14

DESCRIPTION OF PLANT FUNDS

August 31, 1953

PLANT ADDITIONS

DAVIS-HODGKINS HOUSE EQUIPMENT FUND—Gifts of various donors in 1953 to buy equipment for the engineering club house.....	135.30
FIELD HOUSE FUND—Created by the Class of 1946 to assist in building a field house.....	208.77
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Prenatal Nursery.....	100.00
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CHASE, RUTH JUDITH.....	1951 50.00
CLASS OF 1945 LIBRARY FUND.....	1946 58.75
COUNCIL OF RELIGIOUS ORGANIZATIONS LIBRARY FUND.....	1943 325.66
DAVIS, HARRY C., LIBRARY FUND.....	1944 25.00
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GEORGE, CARLOTTA, LIBRARY FUND.....	1952 65.18
HELLENIC SOCIETY LIBRARY FUND.....	1945 225.00
HENSEY LIBRARY FUND.....	1953 5.00
HERBST LIBRARY FUND.....	1947 100.00
HOSPITAL LIBRARY FUND.....	1948 17.84
LINCOLN ARC WELDING FOUNDATION LIBRARY FUND.....	1945 7.02
MURDOCK, MRS. JAMES O., LIBRARY FUND.....	1947 9.80
NOYER, THEODORE W., LIBRARY FUND.....	1947 4,278.52
ROSEN LIBRARY FUND.....	1948 58.23

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"to be used for the following purposes," (here specify in detail the purposes).

8

SUMMARIES OF
DOCTORAL DISSERTATIONS

1953

THE
GEORGE
WASHINGTON
UNIVERSITY

BULLETIN

SUMMARIES OF
DOCTORAL DISSERTATIONS

1953

WASHINGTON, D. C.

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CHICAGO
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THE UNIVERSITY OF CHICAGO
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PREFATORY NOTE

This number of the University BULLETIN contains summaries of the dissertations which have been accepted during 1953, in partial satisfaction of the requirements for the degrees of Doctor of Philosophy and Doctor of Education at The George Washington University.

AVAILABILITY OF DISSERTATIONS

The dissertations in typescript form are filed in the University Library, where they may be consulted by students interested in examining the complete texts.

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SUMMARIES OF DISSERTATIONS
SUBMITTED FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

1953

THE DIPLOMATIC CAREER OF JAMES BUCHANAN

by FRANKLIN POWELL HILLMAN*

When James Buchanan took the oath of office as President of the United States, on March 4, 1857, it was a climax of a career of public service which extended over almost half a century. During this career he was intimately connected with foreign policy in one of the most eventful periods of American history. Of all the presidents to that time, only John Quincy Adams could point to a comparable record of experience in diplomacy. The series of important offices held by Buchanan is almost unparalleled in our history, yet, due to the circumstances under which Buchanan left office, his contributions have long gone unevaluated.

James Buchanan was born on April 23, 1791, at Stony Batter, Pennsylvania, the second of eleven children born to James and Mary Speer Buchanan—both of Scottish-Presbyterian ancestry. His father was a man of fair education and above-average ability, who was able to give James an education better than average for that day. From his father, young James absorbed a keen business sense and a rather cynical outlook on life, while from his mother he received deep religious convictions which remained with him throughout his life.

In 1807, at the age of sixteen, Buchanan entered the junior class at Dickinson College, where his excesses due to a desire to follow the example of others, almost resulted in his expulsion. After graduation, in 1809, Buchanan read law in the office of a prominent lawyer in Lancaster, Pennsylvania and was admitted to the bar in 1812. For several years thereafter he devoted himself to the practice of law, at which he was very successful. During this time he became interested in politics. He first identified himself with the Federalist Party, which was the controlling party in Lancaster at that time. In October 1814, after a very brief role in the war of 1812, Buchanan was elected to the Pennsylvania House of Representatives. After his second term in the Pennsylvania Legislature Buchanan temporarily retired from politics and devoted himself to the practice of law. A tragic love affair in the summer of 1819 caused him to turn once more to politics; although this he probably would have done sooner or later under any circumstances.

In 1820 Buchanan was elected to the United States House of Representatives from a district composed of Lancaster, York, and Dauphin Counties. Nominated and elected as a Federalist, when that party broke up as a national party he became a member of the Democratic Party and an enthusiastic follower of General Jackson. He was sufficiently active in the campaign of 1824 to become involved in the so-called "corrupt

*A.B. 1936, Emory and Henry College; A.M. 1940, The George Washington University; Ph.D. conferred February 23, 1953.

bargain" to an extent which later caused his relations with Jackson to be rather strained. After ten years in the House of Representatives, Buchanan, in 1830, once more retired voluntarily to private life. Again his retirement was of short duration; within less than a year he found himself on the way to a foreign mission. In May of 1831 President Jackson offered him the post of Minister to Russia. After some deliberation Buchanan accepted and on June 2, 1832 arrived in St. Petersburg.

During his short tour of duty in Russia—less than a year and a half—Buchanan not only gained a valuable insight into the problems facing our representatives abroad, but also had a first-hand view of the complexities of European politics. His experiences on this mission were to be extremely valuable to him afterwards. Although hampered by a lack of information and news from the United States, Buchanan acquitted himself very well in Russia. Through able diplomacy, assisted by an opportune change in American tariff policies, he was able to conclude a long-sought-for commercial treaty, but was unable to persuade the Russian government to enter into a maritime treaty. Upon his departure, which was hastened by the news of favorable political prospects in his home state of Pennsylvania, his work was warmly praised by the Emperor, who desired the United States to send him another minister exactly like Buchanan.

After his return to the United States in the autumn of 1833 Buchanan occupied himself with his personal and political affairs for several months before being named to the United States Senate in December of 1834. When, in January of 1837, Buchanan was reelected for a full, six-year term, he was the first person to receive a second election to the Senate from the Pennsylvania Legislature. In the Senate Buchanan soon became one of the leaders of his party. In December of 1836, when the Democrats regained control of the Senate, he was elected Chairman of the Committee on Foreign Relations. This choice was no doubt influenced both by his recent diplomatic experience and by the powerful pivotal position of Pennsylvania in the political picture of the period. As Chairman of the powerful Foreign Relations Committee, Buchanan naturally took an active part in the debates and discussions concerning the major diplomatic controversies of the times.

After the election of 1844, in which Buchanan had, as usual, an active role, he was offered the post of Secretary of State by President-elect James K. Polk. In his letter proffering the position, Polk announced that he did not desire any presidential aspirants in his cabinet, and asked a pledge to that effect, with the proviso that if any member should become a candidate he would be expected to resign from the cabinet. Buchanan accepted with the qualification that he could not be responsible for the unsolicited actions of friends. Although Buchanan's alleged

presidential aspirations were to be a source of much concern to Polk in the following four years, Buchanan at least observed the letter of this pledge.

As Secretary of State under Polk, Buchanan played a prominent part in one of the most turbulent and important eras of American diplomatic history. In the Oregon negotiations he exerted a moderating influence upon Polk's uncompromising views, from which, had they been followed to the letter, war might very well have resulted. During the period of the Mexican war, Buchanan's chief contributions seem to have been in connection with the maintenance of perspective and moderation. Whereas Polk stubbornly insisted that there was no connection between the Mexican and Oregon problems, Buchanan did not lose sight of the fact that such a relationship did necessarily exist. His views served as a necessary counterbalance to the more extreme annexationist views which were represented by Secretary of the Treasury Robert J. Walker and, to a lesser extent, by Polk himself.

A willing candidate for the Democratic presidential nomination in 1848, Buchanan was passed over by his party which chose instead Senator Lewis Cass of Michigan. After the Whig victory in that year, Buchanan became once more a private citizen. He did not, however, contemplate permanent retirement. During the following four years he occupied himself—and kept up his political fences—by carrying on a voluminous correspondence.

After the election of Franklin K. Pierce in 1852, it was almost a foregone conclusion that Buchanan would be called to some post in the new administration. On March 30, 1853, President Pierce proffered him the mission to England. Although not eager to accept, Buchanan reluctantly did so, with the understanding that he was to be charged with the conduct of a general negotiation embracing all of our differences with Great Britain. This proved not to be the case however, and the main question with which he was called upon to deal was that concerning British pretensions in Central America. Although this problem was not solved at that time, his able presentation of the American position with regard to Central American affairs contributed measurably to the eventual relinquishment by the British of their extreme position in that area.

Buchanan's mission to England was fortunate also in that it kept him from being identified in any way with the struggle then going on over Kansas and Nebraska. Even before his return to the United States in the spring of 1856 Buchanan was considered a leading candidate for the presidency and he subsequently received the Democratic nomination for that office.

When inaugurated on March 4, 1857, James Buchanan was sixty-six years old: not the oldest man ever elected as President, but

well above the average. Considering his years of diplomatic experience it might be expected that the conduct of foreign affairs would be one of the strongest points of his administration. His conduct of our foreign relations was vigorous, and even aggressive, but it has been overshadowed by domestic events during his term of office—especially in the last six months. Of particular interest during this period were the final settlement of the Central American differences with Great Britain and Buchanan's repeated recommendations for intervention in Mexico. He left office wreathed in the smoke from the yet-unfired guns of Fort Sumter. He spent the rest of his days in retirement at "Wheatland", his country home near Lancaster, Pennsylvania. He occupied himself by writing a long and elaborate defense of his administration, which was published in 1866. He died of rheumatic gout at "Wheatland" on June 1, 1868, in his seventy-eighth year of age.

Like all humans, James Buchanan was the product of both heredity and environment. By nature he was secretive and strongly inclined to conservatism. A man of calculation, not impulse, he had many friends, but few intimates, possessing an innate distrust of human nature and an instinctive conformity. Had he not already possessed these qualities to a marked degree, the environment in which he grew to political maturity would have necessitated their development. During most of Buchanan's career, only one state, New York, could rival the political maelstrom that was Pennsylvania. The contests in that state were more between individuals, and sectional and local factions, than between parties. To a very large extent, Pennsylvania politics centered on individual issues and the personalities of the politicians, rather than on national parties. Under these circumstances, political survival and leadership depended upon being on the right side of the right questions. Buchanan's success was in large part due to his ability to discern the prevailing currents before he fully committed himself. More than the average politician of his era, Buchanan was a sensitive political barometer—probably by nature, and certainly by necessity. This sensitiveness though, was more to the opinion of other politicians than of the general public. Buchanan was a professional politician and he worked through, with, and by other politicians—amateur and professional.

One of the leading charges against Buchanan has been that he was timid and vacillating to a fault. A great deal of this undoubtedly arises from his conservatism and desire to be on the right side of the political fence. The remaining grounds arise from his inaction in the months after the secession of South Carolina—partly, at least, upon the advice of his Attorney General. A study of his policies and recommendations as Secretary of State, Minister, and President, combined with the testimony of those who knew him best, should be sufficient to

convince an impartial observer that the charge of timidity simply will not hold up. It is rather ironic to find this indictment made of Buchanan, when actually his faults seem to have been more in the other direction of an obstinate attachment to his own opinions.

Although undoubtedly of solid and vigorous intellect, Buchanan was never a man of great miscellaneous reading and, save for law and politics, his learning was limited. Due to his extensive intercourse with leading minds of the day and his residences in Europe, he possessed a very general information upon all current topics, but he was by no means either a scholar or a student. Essentially a constitutional lawyer, Buchanan was noted for a strong desire for legal, orderly procedure and a tendency to consider legal solutions to be all-sufficient in themselves. It may very well be that Buchanan was miscast as a diplomat and statesman. Jeremiah Sullivan Black, who knew Buchanan well, admired him more as a lawyer than in his other roles. Years later Black said that Buchanan should have been Chief Justice, adding that he would have been the greatest jurist that ever graced the bench.

Fate, however, directed that the major portion of Buchanan's career lie in the field of diplomacy. His diplomatic apprenticeship was spent in Russia. From Lancaster to St. Petersburg was a long jump for the young politician, but his performance there was a creditable one and he personally was well-liked. The elaborate procedures of Court life were not distasteful to Buchanan, and, more important, when he later became Secretary of State, he knew from experience the problems of the men to whom he wrote.

As Secretary of State under Polk, Buchanan filled a difficult position in a very eventful administration under one of the most demanding of presidents. Outside of the testimony from men inflamed by the heat of the conflict over secession, the principal source for the portrait of Buchanan handed down to the present seems to be Polk's Diary. Many times in its pages Polk was extremely critical of Buchanan; with the primary criticism being that he was too much influenced by political considerations and too variable. It is interesting to note that almost every unusually severe criticism of Buchanan by Polk in his Diary follows by a few days some disagreement over matters of patronage.

In spite of the exasperation with Buchanan often voiced by Polk, the two in fact worked closely and in harmony throughout most of their term of office—consulting on matters of policy almost every day. In Buchanan's later statements concerning Polk there is no hint of discord or irritation. The friction and surface differences between Buchanan and Polk have had a tendency to obscure a certain essential kinship between the two. Both were headstrong, secretive, calculating, opportunistic, and inclined to be petulant when crossed. They agreed far more often than they differed.

As Secretary of State, Buchanan, as has been pointed out, exerted a modifying influence upon the important Oregon and Mexican negotiations at crucial times. The observer is tempted to conclude that the characteristics of the two men complemented each other to an amazingly effective degree. The policies of either, alone, might have failed; together they achieved important and far-reaching results. Both were nationalists and expansionists—with Polk the more aggressively so. Although Polk kept a firm grasp upon the reins of foreign policy there is every indication that he gave a great deal of weight to Buchanan's opinions, and Buchanan seems to have been chiefly responsible for the emphasis upon commercial expansion during this period. Buchanan and Secretary of the Treasury Walker were regarded as the strongest members of the Polk Cabinet.

As Minister to England under Pierce, Buchanan did an adequate, if not outstanding, job. He was personally very popular and was on first-rate terms with the members of the government. By that time Buchanan had got rid of his earlier traces of Anglophobia. His writings reveal a reluctant respect for efficacy of British diplomacy in general, as well as a liking for individual Englishmen. As individuals he liked the English; as a nation he distrusted them.

The unevenness of the diplomacy of Buchanan's administration may be at least partially explained by the fact that the administration was confronted with domestic problems far more pressing than had been anticipated. At any rate, Europe was almost neglected, with a major portion of the time and attention devoted to foreign affairs being concentrated on the Mexican and Central American situations. Buchanan seems to have anticipated rather clearly the possibility of outside interventions in Mexico, but Congress refused to act upon his repeated recommendations, probably suspecting his motives. The only real success of Buchanan's diplomacy during his presidency came with the settlement of the Central American question with Great Britain. From the early days of Buchanan's career, many serious differences with Great Britain had existed. It was his fate to be intimately connected with most of them. When he left office for the last time, almost all our differences with Great Britain had been finally settled. Although many people contributed to this happy state of affairs, if it were possible to pick one man as having played the largest continuous part, that man would be James Buchanan.

Buchanan's strongest point as a diplomat was in the organization and logical presentation of an argument, not necessarily original. His despatches were laboriously prepared and were carefully written. In spite of his strong disinclination to remain out of this country for long, he seems to have been more effective and happier as a minister abroad. For this kind of work his personal characteristics were eminently suit-

able. However, the qualities which made him a successful politician—a weathervane-like tendency to point into the prevailing political winds, and a devotion to party regularity—prevented him from becoming a first-class statesman. Although he was a good working diplomat, in the end the figure seated behind the desk of the statesman was still that of the professional politician.

A CRITICAL STUDY OF THE MITOCHONDRIA AND GOLGI BODIES IN THE CELLS OF THE KIDNEY, PAROTID GLAND, AND SUBMANDIBULAR GLAND OF THE RAT IN RELATION TO AGE

by STANLEY MORTON KURTZ*

The need for basic cellular studies on the process of aging is evident from the fact that entries in the literature dealing with this problem are indeed scarce. One need only scan a volume such as "A Classified Bibliography of Gerontology and Geriatrics", by Nathan W. Shock to see that the extensive interest in the problem of aging is largely channeled into the categories of clinical medicine and experimental pathology.

On the basis of results of several investigators, the submandibular gland, parotid gland, and kidney of the Wistar Institute rat were selected for cytological studies related to aging. The cellular constituents which were investigated were the mitochondria and Golgi substance. Although recent evidence from many laboratories of cytology has established the importance of the mitochondria as the bearers of numerous respiratory enzymes, the exact role of the Golgi substance is still very much in doubt, and indeed, the configuration of this intracellular substance is periodically attacked as an artifact of fixation. Part of this study was designed to give more information concerning the reality or nonentity of the Golgi substance as seen in fixed preparations.

The literature dealing with mitochondria and Golgi substance contains ample evidence that morphological alterations of these cytoplasmic structures occur in response to various physiological alterations. On the other hand, among the alterations found in relation to age, such things as enspherulation and swelling of mitochondria were seen in some endocrine glands of aged fowl. Decrease in the number of mitochondria in the upper layers of the epidermis was noted in human skin. Several investigators, working with nervous tissue from different species of senile animals discovered granulation and fragmentation of the Golgi substance in neurones of the central nervous system and the sympathetic chain.

It was hoped that extension of these studies to include the organs investigated in this work would yield more information concerning the ageing process and basic cytology.

Tissues from 46 animals, prepared for demonstration of mitochondria and Golgi substance, were examined in this study. About half of the

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group were young and mature animals ranging from 100 to 300 days of age. The remainder ranged from 620 to 900 days of age. This latter group comprised the senile animals. In order to establish possible functional differences between the salivary glands of young and old animals, pilocarpine was administered to 8 animals from each group one hour before sacrifice.

Originally, it had been planned to utilize perfusion fixation in order to prevent the penetration effects which are so prominent in cytological preparations. Also, demonstration of the Golgi substance in its classical configuration after successful perfusion would tend to negate some of the current contention that the Golgi element is an artifact due to slow, differential penetration of the components of fixatives. Unfortunately, we were unable to utilize a perfusion medium which would initially preserve the mitochondria and Golgi substance. Thus, after a number of successful perfusions in which the Golgi element was demonstrated in its classical configuration, the perfusion technique was abandoned for the simpler immersion method in which fixing fluids that would preserve both elements could be used in small quantities.

Examination of the mitochondria in serous cells of the submandibular gland revealed that in the young animals, the mitochondria comprise numerous rods and short filaments with smooth contours. They were evenly distributed throughout those regions of the cytoplasm in which under favorable conditions could be visualized the stored secretion granules. There was only slight variation from the above picture in scattered regions of the sections. In contrast to this picture, the cells of the submandibular gland of the senile animals contained very tenuous mitochondria. The length varied from granules to filaments, but all were delicate in thickness. The number varied from cell to cell and the over-all effect was an apparent diminution in the amount of mitochondrial material.

The cells of the parotid gland of young animals possessed rather thick mitochondria. The shape varied from small spheres to elongated forms. They were numerous, with little deviation from cell to cell. In the old animals the mitochondria varied greatly in size, while the shape was generally spherical. Some very large forms were seen in scattered cells. The number of mitochondria tended to vary from cell to cell so that the effect was a loss of the uniform appearance which was seen in the parotid cells of young animals.

In the submandibular gland cells of the young animals the Golgi substance was seen to be arranged in delicate strands located at the interface between the secretion granules and cytoplasm proper. This appearance was uniform throughout the section. In the cells of the senile animals, the Golgi element varied in thickness from cell to cell, and showed evidence of fragmentation in many places. These changes

destroyed the effect of uniformity which was a characteristic of the younger cells. An additional phenomenon seen in the glands from the senile animals was an accumulation of osmiophilic droplets in many cells.

In the young animals, the cells of the parotid gland contained a Golgi element of rather uniform thickness, usually in the shape of a contracted net or in strands. These were usually limited to a region just apical to the nucleus, but sometimes, the strands extended into the region containing the secretion granules. Similar to the condition in the submandibular cells of the senile animals, the rather uniform appearance of sections of parotid gland from young animals gave way to variation in the appearance of tissues in the senile group of animals. Here, many of the cells contained a Golgi element that was tightly knit and in which the strands were often heavy and fragmented.

The typical appearance of the Golgi substance in the convoluted tubules of the kidney from young animals was that of bars, strands, and nets of osmiophilic or argyrophilic substance almost invariably located about the equator of the nucleus. The amount of Golgi substance was quite constant from cell to cell. In the senile group the amount of Golgi substance was increased in many instances. The strands were generally bolder and sometimes fragmented. As was the case in organs previously observed, there was a loss in uniformity of the configuration of the Golgi element in various parts of the kidney sections taken from old animals. Another aspect of the appearance of renal cells in the senile animals was the presence of large argyrophilic granules. It was difficult to ascertain with assurance whether these were part of the Golgi complex.

Pilocarpine had a very severe effect upon the salivary glands. Histologically, many of the glands were almost unrecognizable. The cellular picture was extremely distorted. Cell outlines were shrunken, the nuclei, which stained heavily in untreated animals, had lost their excessive chromaticity, and there was rarely a trace of secretion granules remaining in the cells.

In the submandibular gland of the young pilocarpinized animals the mitochondria were variable in size and shape even within a given cell. They ranged from granules and spheres to long irregular threads. The distribution was quite irregular, and many bizarre forms, such as crescents, stained intensely. The appearance of the submandibular cells from old pilocarpinized animals, while essentially the same, exhibited a few differences. The mitochondrial material appeared to be reduced in amount. Compared to the younger animals there were only a few elongated forms, and there was rarely a trace of the long, tenuous mitochondria that were seen in the submandibular cells of non-pilocarpinized senile animals.

The effect of pilocarpine upon the mitochondria of the parotid gland was in many respects similar to that seen in the submandibular gland. There was no apparent difference in morphology between the glands of young and old animals. The appearance was one of chaotic distribution of irregularly shaped mitochondria. Some of them were so slender that they were just at the limit of resolution of the microscope. The others assumed granular and vesicular figures of varying size.

The Golgi substance in the submandibular gland of young animals after administration of pilocarpine was not regularly different from the configuration seen in the non-pilocarpinized young animals. The general appearance was one of strands of Golgi material with much granular blackening in the area vacated by the secretion granules. In some areas the strands were heavier than those seen in the general pattern. In the group of senile animals, the submandibular gland was seen to contain Golgi substance that was similar to the young animals. However, the feature of non-uniformity was quite prominent in this group. Some cells contained a heavy, somewhat reticular Golgi network, while others exhibited delicate strands. In some cells, strands were entirely lacking. The presence of accumulations of large osmiophilic droplets, seen in the submandibular cells of non-pilocarpinized senile animals, was noted in this group as well.

The Golgi substance of the parotid gland reacted markedly to pilocarpine. The reaction of the Golgi element in the parotid cells of the young animals appeared to be a blossoming out of the originally contracted net, in which the interstices of the mesh blackened excessively. This spreading out was usually in the direction of the area formerly occupied by secretion granules. Occasionally, disruption of the net was encountered, and fragmentation, or disconnection of the loops occurred. Small osmiophilic fragments were frequently found in the vacant storage area. The reaction of the Golgi substance in the senile group of animals was generally the same as that found in the young animals, with some differences apparent. The general opening out of the net was similar, but there was much variation in the degree of expansion and in the thickness of the strands. The condition of fragmentation was more pronounced than it was in the parotid gland of young animals. The heavily impregnated droplets seen in the non-pilocarpinized old animals were also observed in these animals.

It is extremely difficult to explain the morphological alterations in the mitochondria of the salivary glands related to age, since these changes can be accounted for hypothetically on the basis of either intrinsic alterations within their structure, or extrinsically, by variation of the cytoplasmic environment. Changes in viscosity and pH of the environment have been shown in the past to effect the shape of the mitochondria. Yet, if one accepts the vast amount of work con-

cerning the fundamental relationship between mitochondrial activity and secretion, as well as the evidence that the enzyme content in some glandular secretions from aged individuals is reduced, the probability that the changes are intrinsic is strongly suggested. The fact that excessive variation from cell to cell was almost a constant feature of the cytological appearance of the old tissues indicates a variation in physiological activity among the cells, as if the normal regulating mechanisms had lost control of the tissues. This variation could be interpreted as indicating a loss of integration and efficiency of the whole gland, and could account, in part, for the decreased secretory ability previously noted.

The morphological changes in Golgi substance are especially difficult to relate to a physiological explanation in view of the great diversity of opinion that prevails even as to the existence of this structure in the living cell. The main difference in the configuration of the Golgi element between young and old animals was the cellular variation found in the senile animals which was contrasted to the uniformity noted in the tissues from young animals. To this picture of variation were added scattered examples of fragmentation and loss of integrity of the network. These observations can only lend support to the interpretation given to the similar alterations in the mitochondria of the salivary glands from senile animals.

It is interesting that these morphological alterations in the organs investigated should be of such a modest nature compared to the extensive changes found in the nervous system of comparably senile animals by several investigators. This feature of "differential ageing" of different organ systems in a given animal had been noted several times in the literature, even to the extent where all cells except the basophilic cells of the pituitary gland from senile animals show cytological alteration.

The purpose of the pilocarpine experiment was to attempt to exploit a possible age difference not visible in the "resting" cell by artificial induction of secretion in the salivary glands. It was found that differences between the mitochondria and Golgi substance of young and old salivary glands could be related usually to differences that existed before the administration of pilocarpine. Therefore, the pilocarpine was not successful in bringing to light cytological differences between young and old cells that might be hidden by the relatively dormant state under which the untreated animals were studied.

The perfusion studies, although carried out on a limited scale, were successful in demonstrating that the classical configuration of the Golgi substance was not created by slow, differential penetration of the fixing fluid. Previous work by another investigator, in which liver and intestinal epithelium of mice were perfused with Champy's fluid, also re-

sulted in production of the classical form of the Golgi substance in these cells. These results, after a relatively instantaneous fixation, as well as those of other investigators who demonstrated the Golgi net after freeze-drying the tissues, would seem to indicate that the reticular shape of this cytoplasmic structure may be the form in the living cell.

In conclusion, it can be stated that alteration of mitochondria in the submandibular gland and parotid gland, and alteration in the Golgi substance of these glands and the kidney, are present in senile animals. Although these alterations are not as striking as those seen in some other tissues of ageing animals, the results are in accord with the principle of differential aging in different tissues of the same animal. Also, the use of artificial stimulation of the salivary glands does not establish morphological changes not already observed in the untreated animals. Successful preparations of classical Golgi nets after perfusion fixation indicate that this cytoplasmic element is not artificially produced by slow diffusion of the specific fixing fluids.

THE AMERICAN SPECIES OF AESCHYNOMENE

by VELVA ELAINE RUDD*

Aeschynomene is a genus of the family Leguminosae, subfamily Lotoideae, tribe Hedysareae, subtribe Aeschynomeninae. Some 350 species have been ascribed to it, of which approximately one-half were based on New World material.

The scope of this paper is a taxonomic revision of the American species of *Aeschynomene*, the first such treatment to date. A complete monographic study of the genus has never been published. The earlier encyclopedic works lack many recently described species, and the limited, regional treatments have produced considerable synonymy and misinterpretations.

The genus is chiefly tropical in distribution, with a few species occurring in warm temperate areas. It is characterized by lomentis and by papilionaceous flowers with stamens essentially diadelphous, 5:5. The petals are yellowish, often suffused with red or purple. The leaves are pinnately compound, the leaflets commonly sensitive to light and to touch.

The previously established major division of the genus into two sections is being retained. Section I., *Euaeschynomene*, is readily distinguished by its stipules, which are peltate, appendiculate below the point of attachment, and by its bilabiate calyces. Members of this group lack simple pubescence but may be densely hispid with multicellular, bulbous-based glandular hairs. Some species are annuals, others become shrubby. They are predominantly amphibious, occurring in swamps, wet meadows, along streams, and, rarely, in drier upland locations. With few exceptions, they are found on relatively young land areas, i.e., areas of late Pleistocene to Recent emergence or deposition, such as the coastal plain of southeastern United States, most of the Antilles, the Yucatan peninsula of Mexico, and the basins of the Amazon and Paraná rivers of South America.

Section II., *Ochopodium*, has stipules which are attached at the base and not appendiculate. The calyces are campanulate, each with five subequal lobes. The plants may be pubescent with simple hairs, hispid with glandular hairs, or they may be glabrous. They range in habit from prostrate herbs to large shrubs, or small trees. Relatively few are hydrophytic. Mostly they are found in drier habitats, on sandy beaches, in savanna, in pine and oak woods, or on rocky hillsides. The shrubby species, particularly, are mesic to subxeric and known almost exclusively from older lands, areas which have had a continuous history

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above sea level since Cretaceous time. Such areas include the Sierras of Mexico and of northern Central America, the massifs of Hispaniola, the mountains of Cuba, the Andes from Colombia to Peru, and the highlands of the Guianas and Brazil.

The two sections seem to be naturally separable into species groups. In this paper, five series under *Euaeschynomene* are proposed, and three series under *Ochopodium*. The former are rather readily distinguished, principally on the basis of leaf and calyx characters. The subdivisions of the latter section, chiefly on the basis of habit, leaf, and fruit characters, are less distinct, there being considerable intergradation.

Four species and six varieties are described as new. Several new combinations have been made. In the course of studying related genera, it was decided that *Climacorachis* did not warrant maintenance as a separate genus, and its species have been placed in *Aeschynomene*. About 40 of the species of *Aeschynomene* referred to in the literature as occurring in America have been found to belong to other genera, or to be inadequately typified and, thus, indeterminable. More than 100 taxa have been reduced to synonymy.

The genus *Aeschynomene*, as interpreted in this paper, is represented in America by 67 species, of which several are further subdivided into varieties. Descriptions of all recognized taxa are given, along with keys for their determination, pertinent illustrations, maps showing known geographic distribution, and citation of all specimens studied.

THE EXPERIMENTAL CHEMOTHERAPY OF INFLUENZA AND HERPES SIMPLEX VIRUSES

by KENNETH KANAME TAKEMOTO*

The chemotherapy of diseases caused by the smaller viruses has not been as successful as that for protozoal, bacterial, and rickettsial infections. The larger viruses, the psittacosis-lymphogranuloma venereum group, respond well to the newer antibiotics and the sulfonamides, but these chemotherapeutic agents have not been found to affect the smaller viruses. This study was undertaken in the hope of uncovering new compounds which were inhibitory to virus growth and to study such virus inhibitors from the standpoint of their modes of action. Knowledge of what substances inhibit viral multiplication may lead not only to effective chemotherapy, but also to an understanding of the biochemistry of virus-host cell relationships, including the mechanisms of cellular invasion and the relationships between the host enzyme systems and viral growth.

Three hundred twenty-eight compounds were tested and found ineffective against the LF strain of herpes simplex virus in chick embryos. One hundred eighty-two compounds were tested against the PR8 strain of influenza A virus in embryonated eggs. Twelve compounds were found to prevent the multiplication of influenza A virus in the allantoic cavity of the chick embryo and six of these were also effective against the Lee strain of influenza B. These compounds presumably could prevent growth of the virus through interference at any point in the process of multiplication. Some of the possibilities whereby the virus inhibitors could interfere with virus growth were investigated.

Three of the compounds—congo red, formecin, and polymerized sodium salts of substituted benzoid sulfonic acids—were effective against virus concentrations as high as 1,000,000 50 per cent infectious doses (1,000,000 ID₅₀). They were also effective at low drug concentrations and gave favorable chemotherapeutic indexes (the ratio of the maximal tolerated dose to the minimal effective dose). The other effective compounds exhibited less activity in suppressing viral growth. Viral growth was prevented by 1-Dodecyl-pyridinium-5-chloro-2-benzothiazolyl sulfide and the palmitic acid ester of ascorbic acid up to 10,000 ID₅₀, but only at concentrations of drug approaching toxic doses. The virus was inhibited by 3-Nitro-anthranilic acid, N-(2-carboxyethyl)-DL-methionine, and 1-(6-chloro-2-methoxy-9-acridylamino)-3-diethylamino-2-propanol at 1,000 ID₅₀ when maximum doses of drug were used. Four other compounds—9-vinyl-carbazole; the phenyl ester of di-4-morphinyl-phosphinic

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acid; 2-amino-5-(2-benzothiazolyl)-benzenesulfonic acid; and *trans* 1,2-cyclohexanedicarboxylic acid—prevented multiplication when tested against 100 ID₅₀ of virus.

The test procedures whereby the 12 compounds were found to inhibit influenza A multiplication were such that direct inactivation of the virus was possible in the allantoic cavity. The drug was injected in 0.5 ml. amounts followed immediately by virus inoculation; a highly virucidal compound under such conditions could inactivate the virus *in vivo* before infection could be initiated. Investigations were therefore conducted to determine the virucidal activity of these compounds *in vitro*. When the virus was placed in direct contact with the drugs for varying periods of time, several compounds were found to inactivate the virus at concentrations of drug slightly higher than those calculated to be present in the allantoic cavity. The virus, within one hour, was found to be inactivated by 3-Nitro-anthranilic acid; N-(2-carboxyethyl)-DL-methionine; formecin; and *trans*-1,2-cyclohexanedicarboxylic acid. These compounds could inactivate the virus extracellularly in the allantoic cavity of the chick embryo. The other compounds exhibited virucidal activity only at high concentrations which were greater than those normally present in the allantoic cavity.

Studies on the growth cycle of the influenza virus in the allantoic cavity of embryonated eggs have shown that infective particles appear six to nine hours after cellular invasion; the inoculated virus particles are taken up by the cells within 30 minutes after injection and start the intracellular processes of multiplication. Experiments were conducted to determine how long after injection of virus the drugs would remain effective in preventing multiplication. Four compounds were found to be ineffective when given as early as one hour after inoculation of virus. These were 9-vinyl-carbazole; N-(2-carboxyethyl)-DL-methionine; *trans*-1,2-cyclohexanedicarboxylic acid; and 2-amino-5-(2-benzothiazolyl)-benzenesulfonic acid. 3-Nitro-anthranilic acid, formecin, congo red, and polymerized sodium salts of substituted benzoid sulfonic acids were effective when given five hours or more after the virus. 3-Nitro-anthranilic acid and formecin were previously found to be highly virucidal but could still prevent infection when given five hours after virus inoculation. Perhaps this is an indication that they may be virucidal but also be capable of interfering with viral growth at some intracellular site. Polymerized sodium salts of substituted benzoid sulfonic acids and congo red prevented growth at 8 and 12 hours after infection, respectively. Since both have been shown to be without great virucidal activity, the evidence suggests interference with intracellular viral growth as a possible explanation of their mechanism of action. The other compounds—1-dodecyl-pyridinium-5-chloro-2-benzothiazolyl sulfide, the palmitic acid ester of ascorbic acid, 1-(6-chloro-2-methoxy-9-acridyl-

amino)-3-diethylamino-2-propanol, and the phenyl ester of di-4-morphinyl-phosphinic acid—prevented multiplication from three to five hours after virus inoculation.

When tested in an adult host, the mouse, the 12 compounds were found to be ineffective in preventing influenza A infection. Daily treatment by intraperitoneal injections of drugs failed to prevent death or cause a delay in death time.

Thirty-seven naturally occurring compounds were tested for their ability to reverse the inhibition of viral growth in embryonated eggs caused by 6 of the 12 inhibitors. Among the 37 naturally occurring substances were amino acids, vitamins, purines, pyrimidines, and nucleic acids. Formecin was reversed by histidine and methionine at low concentrations of the drug. Methionine was also found to antagonize the inhibition caused by the palmitic acid ester of ascorbic acid. Betaine and uracil were found to reverse the inhibition of 1-dodecyl-pyridinium-5-chloro-2-benzothiazolyl sulfide. None of the 37 metabolites reversed the inhibition of 1-(6-chloro-2-methoxy-9-acridylamino)-3-diethylamino-2-propanol, a chloro-acridine. Previous investigation by other workers had shown that some of the acridines could be antagonized by such substances as ribonucleic acid, riboflavin, niacin, and thiamin. These were tested in this study against the chloro-acridine and found to have no effect on drug inhibition.

Tryptophane reversed the inhibition of viral multiplication by polymerized sodium salts of substituted benzoid sulfonic acids at low concentrations of the drug. Drug concentrations above this minimal amount were unaffected by tryptophane. The type of antagonism in this instance may be similar to that exhibited by methionine and the sulfonamides. Methionine reverses sulfonamide inhibition but only at minimal concentrations of the drug. Higher concentrations of sulfonamides can not be antagonized. Guanine and xanthine enhance methionine antagonism but in the absence of methionine are without effect. Perhaps there may be other substances that would have the same enhancing effect of the antagonism of polymerized sodium salts of substituted benzoid sulfonic acids by tryptophane, but this possibility was not investigated.

Riboflavin reversed the inhibition of congo red in a type of antagonism similar to that described for tryptophane and polymerized sodium salts of substituted benzoid sulfonic acids. Low concentrations of congo red are effectively overcome by riboflavin, but higher concentrations of the drug are unaffected regardless of the amount of riboflavin injected.

Thiamine hydrochloride also reversed congo red inhibition, but the antagonism appears to be due to a different mechanism. It was found that thiamine hydrochloride forms a precipitate with congo red both *in vivo* and *in vitro*. The *in vivo* precipitation apparently makes the drug

unavailable for virustatic action. A quantitative relationship exists between the amount of congo red injected and the amount of thiamine hydrochloride that is necessary to reverse the inhibition. Drug antagonism based on combination of drug and antagonist to form inactive complexes have been known to occur. Urethane, for example, combines with sulfonamides to form inactive complexes. Cobaltous ions inhibit influenza virus multiplication, but histidine, cysteine, and sodium thioglycolate reverse this inhibition by combining with the cobalt ions to form complexes that are incapable of preventing virus multiplication.

THE EFFECTS OF FATIGUE ON THE ANTERIOR HORNS OF THE MOUSE SPINAL CORD, C₅-TH₁ LEVEL, RELATIVE TO AGING PROCESSES

by ROBERT HENRY BROWNSON*

This investigation was undertaken in an effort to establish a better understanding of the qualitative and quantitative changes that occur in the central nervous system relative to age and fatigue.

Whether or not intense functional activity is accompanied by demonstrable morphological alterations in the central nervous system is an unsettled question. However, it has been generally accepted that certain progressive, measurable changes occur as a result of aging processes, and these changes may be the result of the tissue's inability to maintain homeostasis in a changing environment.

Morphological changes in cellular and extra-cellular structures as a result of functional activity have been under investigation by a large number of workers over a period of many years. C. F. Hodge, in 1892, studied the effects of electrical stimulation of the dorsal root ganglia of frogs and cats. F. Nissl, in 1898, maintained the view that many of those morphological alterations resulting from fatigue, that were reported by other workers, were artificially produced. D. H. Dolley, in 1911, performed many outstanding investigations on fatigue using better experimental methods than many of his predecessors. Dolley likewise established a variety of opinions regarding changes in nucleocytoplasm relationships and variations in basophilia of nerve cells during functional fatigue. W. Andrew, in 1936, investigated changes that occurred in the central nervous system during fatigue, with special reference to the factor of age. He and others have stressed the importance of taking age into account when dealing with the effects of fatigue. W. F. Windle, and others, in 1950, attempted to reproduce functional changes in nerve tissues but could find no alterations in the central nervous system except those which they thought occurred as artifacts due to inadequate fixation.

Irrespective of the fact that in the last fifteen years considerable advances have been made in the study of composition and function of the "Golgi apparatus", it is not yet possible to give a definite interpretation of its nature and functional significance. This organoid was discovered by means of the silver method developed by C. Golgi, in 1898, in the nerve cells of the barn owl and cat. The apparatus has since been found in nearly all the differentiated cells of the vertebrates. Recent investigators, such as H. Elitman, in 1951, found that no matter how

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drastic a treatment preceded the final picture presented by the "Golgi apparatus", identical procedures seldom resulted in similar organization within the apparatus. This reflected a convincing argument for the changing capacity of the apparatus to react with unchanging methods of preparation. Windle and others have elaborated on the perfusion method of fixation in an attempt to reduce the possibilities of artifacts. With the advent of greater limits of magnification and better techniques for tissue fixation and staining, there have been improvements in the accuracy of the data contributed to this field of study.

This investigation was conducted on the mouse. The mouse was a source of good experimental material not only because of its relatively short life span, but also because it could be readily handled, kept in large numbers, and exercised in a small cage.

The production of fatigue was accomplished by a motor-driven rotary cage, employed in such a manner as to maintain the experimental animal in a state of forced exercise until it was completely exhausted.

For each of the experimental animals sacrificed, following subjection to forced exercise, a control litter mate of the same sex and environment was also sacrificed.

All animals, control and experimental, were sacrificed by perfusion fixation. The perfusion fluid, a solution of formaldehyde, U.S.P. 10 per cent, made isotonic with sodium chloride and containing gum acacia, was perfused through the animal's left heart at 120 mm. of Hg. pressure while it was under nembutal anesthesia.

Following the animal's death the brain and spinal cord, to the Th₁ level, were removed in toto and placed in their final fixatives.

Nerve tissues from the spinal cord, C₆-Th₁ levels, were then prepared for study in the prescribed histological manner and the following quantitative and qualitative analyses performed: (1) Chalkley's method of quantitative morphological analysis, which provided a means of directly measuring area ratios of cellular and extra-cellular elements in the anterior horns of the spinal cord; (2) micrometer disc method which provided a means of obtaining by a simple optical graduated system a quantitative measurement of nuclear dimensions; (3) micrometer disc method, which in addition to measuring nuclear diameters was also adapted to the purpose of counting anterior horn cell satellite cells (glial cells); (4) thionin staining reaction analysis, which provided a selective system for the purpose of classifying the staining capacities of the anterior horn cells into "hypochromatic" and "chromatic" categories; (5) Golgi apparatus analysis by the silver method, which provided comparison with earlier activity studies in this field; (6) statistical analysis which provided a means of ascertaining whether or not the experimental data were sufficient to warrant acceptance or rejection of certain hypotheses.

The quantitative measurements were collected from 15 animals, 8 experimental and 7 control, while some 60 control and experimental animals contributed to the qualitative analysis. All animals were pedigree female mice whose ages ranged from 21 days to and including 812 days.

Control and experimental mice received identical treatment in all respects with the exception of those subjected to the rotary cage fatigue. The experimental animals were weighed to the nearest .1 gm. before and after the experience of fatigue. Control animals were also weighed to the nearest .1 gm. before being sacrificed.

The average values for the control and experimental animal physical measurements were as follows: age, 430.38 days; weight, 22.6—23.6 gms; cage speed, 12 r.p.m., and fatigue time, 72 minutes.

An analysis of the data permits the following deductions:

1. With Reference to Age

- a) There was a progressive increase in anterior horn cell nuclear diameters, from young to old animals, which was significant even though there was some fluctuation in adjacent age levels.
- b) The nucleocytoplasmic (C/N) ratio was generally stable throughout the age span tested. Some fluctuations were evident. As age advanced there was a decrease in the ratio.
- c) The nucleointercellular (I/N) ratio showed no stability and fluctuated over the entire age span.
- d) The nucleoglia cell (G/N) ratio was unstable and fluctuated over the entire age span, but less so than the (I/N) ratio. There was a trend toward a decreased ratio throughout most of the life span with a tendency toward an increased ratio in advancing senility but never did it reach the ratio established by the 21-day animals.
- e) The glial satellite cell count revealed a decrease in the total satellites as age advanced in all animals.
- f) As age advanced the percentage of anterior horn cells having glial satellites decreased.
- g) As age advanced the number of glial satellites associated with a single anterior horn cell decreased.
- h) The total number of chromatic anterior horn cells in any age group greatly outnumbered the total number of hypochromatic anterior horn cells.
- i) As age advanced there was a tendency for a decrease in the number of basophilic or chromatic anterior horn cells. This was most clearly evidenced when young and old animals were compared.
- j) The anterior horn cells of young animals were characterized by the canalicular type Golgi apparatus while the cells from old

animals showed a predominance of a granular type of Golgi structure.

2. With Reference to Fatigue

- a) There was no convincing statistical evidence to indicate that fatigue caused definite changes in mean nuclear diameters.
- b) There was no convincing statistical evidence to support a change, resulting from fatigue, in the quantitative relationship between neuron and extra-neuron structures in the anterior horns (Chalkley Method).
- c) There was no convincing statistical evidence to support a quantitative change in the relationship of anterior horn cells with their associated glial satellites as a result of fatigue.
- d) In any age group fatigue caused an increase in the hypochromatic and a decrease in the chromatic anterior horn cells. This indicated a decrease in the basophilic properties of the cells resulting from fatigue.
- e) Fatigue tended to alter the typical canalicular Golgi apparatus of young animals to a more fragmented diffuse granular form.
- f) Fatigue appeared to accentuate the granular Golgi structure of old animals. There was tendency toward increased polarization.

3. General

Statistical analyses indicated that there was little relationship between age, loss of weight, cage speed, and fatigue time.

ACTION OF SALICYLATES AND RELATED COMPOUNDS
ON CARBOHYDRATE METABOLISM AND ON ADRENAL
ASCORBIC ACID AND CHOLESTEROL
CONCENTRATIONS

by GLORIA MARIE COMULADA*

This study was undertaken to elucidate possible endocrinological mechanisms in the action of salicylates and related compounds. Salicylates have been used in the therapy of rheumatic fever, since 1876, and the anti-pyretic, analgesic, and anti-inflammatory properties of this drug are well known. There has been virtual agreement as to its effectiveness, however, opinion differs as to how this drug affords relief. Little is known of its mode of action, although salicylates have been among the most extensively investigated drugs both clinically and experimentally. Some impetus for the theory concerning the hormonal mode of action of salicylates and salicylic acid derivatives resulted from the dramatic remissions obtained with cortisone and ACTH in the therapy of collagen diseases. Possible relationships between the extent of effects produced and the molecular configuration of these salicylate drugs, were a part of this study, and to this end several mono and dihydroxy derivatives were introduced.

Long before salicylates were prepared synthetically, they were known to occur in a wide variety of plants. Crude preparations containing salicylate were included in the materia medica up to the time of the Renaissance. Salicylic acid was first prepared by Piria in 1838. It was not until 1860 that it became generally available through the synthetic manufacture from phenol by Kolbe and Lautemann. Stricker used sodium salicylate in clinical trials conducted on rheumatic fever in 1876. It was concluded that the drug was not only an antipyretic, but also a specific remedy for rheumatic fever. Aspirin was introduced into clinical medicine in 1899 as a more tolerable replacement for sodium salicylate. At the time this problem was undertaken, it was believed by many, that salicylate had an ACTH-like effect in that it stimulated the release of cortisone from the adrenal cortex. At the beginning of this investigation the principal intent was to obtain adequate proof of the ACTH-like effect of salicylates and see if related compounds had a similar effect. It appears that whether cortisone, ACTH, or salicylates have been administered, many effects are the same. One cannot, however, accept by inference alone, from such similarities, that salicylates produce their effects through the pituitary-adrenal system. The marked depletion of adrenal ascorbic acid is abolished by hypophysectomy. ACTH

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and salicylates produce a significant decrease in circulating eosinophils in man. Salicylates, cortisone, and ACTH increase urinary uric acid excretion and are used in the therapy of gout. Salicylates inhibit hyaluronidase activity *in vivo*, but not *in vitro*. Cortisone inhibits hyaluronidase spreading action in intact and adrenalectomized rats and mice. ACTH and cortisone inhibit the anaphylactoid reaction after administration of egg white in rats, and salicylates decrease incidence of death from anaphylactic shock in rabbits sensitized with egg albumin. Large doses of salicylate were used to prevent diabetic glycosuria, at the turn of the century. Aspirin has been found to reduce glycosuria of rats made diabetic by partial pancreatectomy. Glycosuria is induced after administration of ACTH, sodium salicylate, and cortisone in intact rats. Other drugs such as cinchophen and derivatives, histamine, aminopyrine, and epinephrine, can stimulate the anterior pituitary and cause a decrease of adrenal ascorbic acid. This effect can be abolished by hypophysectomy.

The acute toxicity of all the drugs employed was determined on CAF₁ mice, male and female, the former predominating. The study was carried out on the basis of a single-dose effect, but at different dose-levels for a particular drug. Whenever possible, at least ten animals were injected at a given dose-level. The percentage of deaths at different dose-levels of a particular drug, was plotted on probit paper. The point at which the plotted curve crosses the 50 per cent point, extended as a straight line, is called the LD₅₀. Injections were made intraperitoneally. Animals were kept under surveillance for a week after injection. The lethal dose for the following drugs by the intraperitoneal route was: hexahydrosalicylate, 7,600 mg. per Kg.; gentisate, 4,000 mg. per Kg.; beta-resorcyate, 3,600 mg. per Kg.; meta-hydroxy-benzoate, 3,100 mg. per Kg.; salicylamide, 820 mg. per Kg.; gamma-resorcyate, 800 mg. per Kg.; phenacetin, 760 mg. per Kg.; acetylsalicylate, 740 mg. per Kg.; salicylate, 640 mg. per Kg.; salicylsalicylate, 390 mg. per Kg.; and phenylbutazone, 240 mg. per Kg. A rapid onset of depression followed salicylsalicylate and salicylamide administration in rats and mice. Salicylamide has been found by other investigators to cause central nervous system depression rather than the stimulation which is characteristic of salicylates. The acute toxicity of pyrocatechuic acid was not determined because insufficient drug was available.

In the experimental routine all the drugs tested were given at a dose high enough to insure pronounced pharmacologic effects. A two-hour observation period was chosen as the interval after drug administration, before sacrifice, because peak plasma levels of salicylate are usually reached by this time in man and animals. Only male albino rats were used in all of these experiments because oestrus in females has been shown to interfere in the assay of hormonal requirements. The amount

of ascorbic acid in the adrenal glands is a measure of their cortical activity, and is under the control of pituitary adrenocorticotrophic hormone. Experimental evidence that alteration in adrenal ascorbic acid is a valid measure of pituitary ACTH activity is as follows: (1) subsection to stress produces depletion in a period of less than one hour, (2) hypophysectomy leaves adrenal ascorbic acid inert and non-responsive to stress, (3) purified ACTH depleted adrenal ascorbic acid of the hypophysectomized rat. The same evidence follows for adrenal cholesterol. Biochemical determination for total ascorbic acid was done by the method of Roe and Kuether (1943) as adapted for analysis on adrenals by Sayers *et al.* (1948). The modification of Sperry and Webb (1950) was used for determination of adrenal cholesterol.

All drugs were injected intraperitoneally as their sodium salts. Drugs were administered successively in rotation up to a final total of approximately ten rats per drug. Individual doses of drugs were weighed and prepared fresh daily, after the rats were weighed. Control rats were given 0.9 per cent physiological saline. Except for cortisone and large doses of hexahydrosalicylate, all drugs and saline were injected in a volume of one cc. per rat. Animals were anesthetized with intraperitoneal injections of nembutal (50 mg. per kilo body weight). Adrenals were excised through a single dorsal incision. Ascorbic acid determinations were made on the left adrenal. It was possible to keep the right adrenals in the frozen state until enough were accumulated for cholesterol determination.

For studies on carbohydrate metabolism, the experimental procedure outlined above was modified in the following manner. Animals were fasted overnight, but allowed water. After glucose injections, drinking water was removed. The Good *et al.* (1933) method was used to determine glycogen, and the Shaffer and Somogyi method (1933) was employed for glucose determinations from tissue hydrolysates and blood filtrates.

An analysis of variance was made on the data obtained for each type of experiment involving samples of tissue.

Intact rats were given laboratory purina chow and tap water *ad libitum*. Hypophysectomized rats were fed canned dog food containing liver, dried milk, and tap water, *ad libitum*.

Several investigators have reported that salicylates and derivatives depleted the ascorbic acid of adrenals of rats. This effect depends upon elaboration of ACTH from the anterior pituitary. Intact rats received intraperitoneal injections of various drugs as sodium salts in doses of 4 mM. per Kg. body weight. Two hours after drug administration, adrenals were excised to determine the effect on adrenal ascorbic acid and adrenal cholesterol concentrations. Aspirin and sodium salicylate produced a pronounced drop in adrenal ascorbic acid. Gentisate.

beta-resorcyate, pyrocatechuate, and gamma-resorcyate, all dihydroxy derivatives; salicylsalicylate, salicylamide, meta-hydroxy-benzoate, phenacetin, and hexahydrosalicylate also produced moderate depletion. On the basis of observations made in this study, it appears that when the dosage administered approaches the LD_{50} , a larger fraction of ascorbic acid in the adrenals is reduced. This is also true of phenacetin and hexahydrosalicylate. Ability to form a chelate ring possibly enhances pharmacological effect as well as therapeutic effects, as has been postulated by some investigators. Of the mono-hydroxy derivatives, the greatest drop in adrenal ascorbic acid was observed after administration of aspirin and sodium salicylate, and after gamma-resorcyate of the dihydroxy derivatives. These were the drugs best able to form the chelate ring structure because their active groups were in close proximity. This was also true of hexahydrosalicylate after the dosage approached the LD_{50} . Of all the drugs administered only pyrocatechuate affected adrenal cholesterol concentrations. It caused depletion two hours after administration. Cholesterol depletion parallels ascorbic acid depletion in the adrenals, however there is a time lag. Whereas ascorbic acid levels drop in twenty minutes and remain low for two or three hours, maximum cholesterol depletion is not observed usually until at least three hours after drug administration. Possibly if the experimental period had been extended until three hours, depletion after administration of other drugs would have been recorded. Cholesterol concentrations after aspirin administration was also quite low, however it was not statistically significant.

The problem was extended to include carbohydrate metabolism. Since most of the drugs studied depleted ascorbic acid, the relation of this effect to the molecular configuration of the drugs was not distinct. Investigation was concerned with whether or not salicylates stimulate the pituitary-adrenal system in such a way as to elicit a response resulting in the liberation of hormones from the adrenal cortex. The manner in which these effects occurred was measured indirectly through biochemical changes in the target organs involved. It was hoped that the study of the effects of these drugs on carbohydrate metabolism would emphasize any existing differences or similarities. Some investigators have suggested that the drop in ascorbic acid is accompanied by release of glucocorticoids leading to liver glycogen deposition. Furthermore, cortisone, ACTH, and salicylates raise fasting blood sugar levels in rheumatic fever patients, and it has also been reported that signs similar to those of mild Cushing's syndrome have developed after aspirin and gamma-resorcyate administration. Intact rats were fasted overnight. The next morning intraperitoneal injections of 5 cc. per kilo of a 40 per cent glucose solution were followed two hours later by injections of the various drugs. Cortisone was studied for comparison. Blood sugar,

liver and muscle glycogen were measured. Aspirin, sodium salicylate, and salicylsalicylate produced marked diminution in liver glycogen. The other drugs produced smaller or negligible effects. None of the other salicylate derivatives produced significant effects on blood sugar or muscle glycogen levels. Hexahydrosalicylate, however, at a low dose of 4 mM. per Kg. raised blood sugar while at a high dose (7,600 mg. per Kg.) it lowered blood glucose and muscle and liver glycogen levels. The latter dose more nearly corresponded in toxicity to the dose of salicylate employed. Phenylbutazone was studied also. This drug is a known anti-rheumatic drug unrelated to salicylate in structure. Its effects were not distinguishable from the saline control in any of the experiments (dose 114 mg. per Kg.). Phenacetin is an anti-pyretic-analgesic drug, as is salicylate, but also unrelated in structure. This drug did decrease adrenal ascorbic acid at a dose of 4 mM. This effect is similar to that of salicylate, however, at this dosage, whereas salicylate and aspirin deplete liver glycogen, phenacetin maintains it. Salicylate and aspirin maintain muscle glycogen, and phenacetin depletes muscle glycogen. Blood sugar remained unchanged. Aspirin and sodium salicylate depleted the blood glucose, liver, and muscle glycogen of hypophysectomized rats.

The drugs employed in this study were chosen because of a particular type of chemical configuration, or a specific type of pharmacological activity related to salicylates. Gamma-resorcyate, salicylamide, and gentisate have proved beneficial in therapy in clinical trials on rheumatic fever. Meta-hydroxybenzoate lacks anti-rheumatic property although the only difference when compared to salicylic acid is a change in the position of the phenolic hydroxyl. Several investigators have found that a direct proportionality exists between dosage of salicylate administered and the extent of adrenal ascorbic acid depletion. Phenylbutazone produces no depletion, while phenacetin also unrelated in structure to salicylate, does produce depletion.

The most important effects on carbohydrate metabolism were those on liver glycogen. The depletion caused by salicylate is not abolished by hypophysectomy. The discrepancy between the marked liver glycogen deposition caused by cortisone, and the pronounced depletion after salicylate administration, suggests that if the effects in humans are similar, the effects of salicylates in rheumatic fever may not be due to a result of cortisone release from the adrenal cortex. Though the end results of these two drugs are the same in rheumatic disease, their mechanisms of action must be different.

It was concluded that adrenal ascorbic acid depletion was not a criterion for anti-rheumatic property of a drug. It is suggested that the therapeutic effects of salicylates are not mediated through the pituitary-adrenal system, but through some other mechanism not yet elucidated, which, however, may not be a hormonal mechanism.

SOME ASPECTS OF THE METABOLISM OF RADIO-CARBON-LABELED 4-AMINO-5-IMIDAZOLECARBOXAMIDE

by GAYLORD MAURICE CONZELMAN, JR.*

The compound 4-amino-5-imidazolecarboxamide was synthesized in 1923 by Windaus and Langenbeck, but like many other compounds synthesized in the organic laboratory, its biological importance was not recognized for twenty years. In 1945, Stetten and Fox isolated a diazotizable nonacetylatable amine from the media of sulfonamide-inhibited *Escherichia coli*. This amine was later identified as 4-amino-5-imidazolecarboxamide by Shive and co-workers, and recognized as a possible precursor of nucleic acid purines. In view of its possible important role in purine biosynthesis, 4-amino-5-imidazolecarboxamide seemed worthy of further study in other organisms. The purpose of the present investigation was threefold: to study the metabolism of 4-amino-5-imidazolecarboxamide-4-C¹⁴ in normal and tumor-bearing mice, to elucidate further the steps of purine biosynthesis in normal and neoplastic tissue, and to use 4-amino-5-imidazolecarboxamide-4-C¹⁴ as a tool to get further information on the mechanism of X-irradiation effect on purine biosynthesis.

Normal CAF₁ mice and CAF₁ mice transplanted with sarcoma 37, served as the experimental animals for the larger part of this investigation. The pharmacological effects of 4-amino-5-imidazolecarboxamide were determined in a dog.

A modification of the method of Bendich and Brown was used for the isolation and degradation of nucleic acids. The specific radioactivity of the purines, after separation and purification by ion exchange chromatography and direct plating on glass disks, was determined in a gas-flow proportional counter. The carbon-14 content of biological materials was determined by assay of the carbon dioxide resulting from complete combustion of these samples. Other general procedures included: ultraviolet spectroscopy, paper chromatography, and counter-current distribution.

Acute toxicity studies showed that mice could tolerate doses of one gm. of 4-amino-5-imidazolecarboxamide per kg. of body weight without toxic effects. Moderate doses of 4-amino-5-imidazolecarboxamide fed for a period of seven days were found to produce only slight toxicity.

No observable effect on the blood pressure, heart rate, or respiration in the dog was produced by 4-amino-5-imidazolecarboxamide. Daily administration of 4-amino-5-imidazolecarboxamide to tumor-bearing mice caused neither stimulation nor inhibition of the tumor. The internal

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organs of mice receiving moderate doses of 4-amino-5-imidazolecarboxamide for seven days showed no gross pathology.

Results of excretion studies indicated that negligible amounts of 4-amino-5-imidazolecarboxamide were completely oxidized to CO_2 ; therefore, it is improbable that the radioactivity found in the tissue purines was derived from radioactive CO_2 in metabolic pool.

For a given dose of 4-amino-5-imidazolecarboxamide administered, an average of 70 per cent was excreted in the urine within two hours, and a total of 80 per cent was excreted within 24 hours. These results showed that 4-amino-5-imidazolecarboxamide was rapidly absorbed from subcutaneous depots and the intraperitoneal cavity, and that 4-amino-5-imidazolecarboxamide and/or its metabolites were rapidly cleared by the kidney. Analyses of the feces indicated that negligible amounts were excreted by way of the gastrointestinal tract. Distribution studies indicated that 13 to 25 per cent of a given dose was retained in the body 24 hours after administration. Of the amount retained, approximately one-fourth was found in the internal organs (thymus, liver, spleen, and kidneys). In mice bearing sarcoma 37, an additional 5 per cent was found in the tumors.

Results from incorporation studies indicated that the retained radioactivity was contained chiefly in the nucleic acid purines. Only negligible amounts of radioactivity were found in the pyrimidine nucleotides and tissue proteins.

The incorporation of 4-amino-5-imidazolecarboxamide into the purines of pentosenucleic acid (PNA) isolated from the internal organs was found to be about five times greater than the corresponding desoxypentose nucleic acid (DNA). These findings would suggest that 4-amino-5-imidazolecarboxamide was utilized for the formation of PNA purines at a higher rate than for the formation of DNA purines, or that DNA purines were turned over at a slower rate than PNA purines. Since other workers have found that glycine is incorporated equally into PNA and DNA, the former hypothesis is probably correct. In any case, the results do not support the hypothesis of Brown that DNA is "biochemically stable" and is not in dynamic equilibrium with other moieties.

Although the incorporation of 4-amino-5-imidazolecarboxamide into the organ PNA purines of tumor-bearing mice was higher than the corresponding DNA purines, the incorporation of 4-amino-5-imidazolecarboxamide into the sarcoma PNA purines was somewhat lower than the corresponding DNA purines. These data would indicate that extensive mitosis in the rapidly growing sarcoma produces a greater need for DNA. The relatively large nuclei of the sarcoma would account for a relatively higher content of DNA than that found in normal cells.

A comparison of the incorporation of 4-amino-5-imidazolecarboxamide into the liver nucleic acid purines of the tumor-bearing mice and the

liver nucleic acid purines of normal control mice indicated a higher incorporation into the former, especially the DNA purines. These observations would suggest that either (1) the nucleic acid purines of the liver of tumor-bearing mice are turned over at a more rapid rate than normal mice, or (2) that a dynamic equilibrium exists between the liver nucleic acids and the tumor nucleic acids, or (3) that a concomitant increase in the nucleic acid content of the liver accompanies the growth of the sarcoma. The data of this investigation do not permit a definite conclusion, but the latter explanation would be favored since other workers (Reddy and Cerecedo, Lombardo and co-workers) have found an increased content of nucleic acids in the livers of tumor-bearing mice.

Although considerable variation was found in the amount of radioactivity incorporated into the nucleic acid purines of the various sources, the molar activity of the isolated adenine was nearly always higher than the corresponding guanine. These findings would support the hypothesis of Brown and co-workers that adenine is a precursor of guanine, but do not eliminate other possible explanations for these observations.

The results of experiments carried out to determine the effect of X-irradiation on the incorporation of 4-amino-5-imidazolecarboxamide into nucleic acid purines support the findings of a majority of other workers who have done somewhat similar studies with other purine precursors. X-irradiation apparently inhibits the biosynthesis of DNA purines since it was found that less 4-amino-5-imidazolecarboxamide was incorporated into the liver DNA purines of X-irradiated mice than into the corresponding DNA purines of nonirradiated mice. It was also found that a concomitant increase in the incorporation of 4-amino-5-imidazolecarboxamide into liver PNA purines occurred in the irradiated animals, compared to the control animals. This observation would suggest an accumulation of excess PNA in the cytoplasm, and would support the hypothesis that PNA serves as a precursor for DNA.

Although an appreciable amount of the administered 4-amino-5-imidazolecarboxamide was found to be incorporated into the tissues of the mouse, approximately 80 per cent of the administered radioactivity was found in the urine. Analyses of the urine collected from mice receiving 4-amino-5-imidazolecarboxamide indicated that for a given dose, approximately one-half was excreted in the urine unchanged. 4-Amino-5-imidazolecarboxamide isolated from the urine was found to have the same specific radioactivity as that administered. It cannot be concluded from this finding alone that 4-amino-5-imidazolecarboxamide is not a normal intermediate in purine biosynthesis because dilution of radioactivity by a small metabolic pool of 4-amino-5-imidazolecarboxamide probably would not be apparent by this method of measurement. Another 30 per cent of the administered radioactivity was found in the urine as metabolites of 4-amino-5-imidazolecarboxamide.

The major metabolite was not diazotizable until after mild hydrolysis, but since the ultraviolet absorption spectrum did not change after hydrolysis and differed from that of 4-amino-5-imidazolecarboxamide, it can be concluded that it was not a simple conjugate of 4-amino-5-imidazolecarboxamide. These findings would suggest that the major urinary metabolite was a conjugated aromatic amine which after hydrolysis gave the Bratton-Marshall diazotization and coupling reaction, typical of aromatic amines.

The allantoin isolated from mice receiving 4-amino-5-imidazolecarboxamide daily for seven days was found to be only slightly radioactive. This finding would suggest that the allantoin was not formed directly from the administered 4-amino-5-imidazolecarboxamide, but was probably derived from the degradation of radioactive tissue purines.

The results of this investigation demonstrating the incorporation of administered 4-amino-5-imidazolecarboxamide into the purines of nucleic acids of the mouse add another species to the list of organisms which can utilize this compound for purine biosynthesis. Reports of other investigators have indicated that in the rat, the *purineless* mutants of *E. coli*, the pigeon, and in yeast, 4-amino-5-imidazolecarboxamide can serve as a source of nucleic acid purines. The utilization of 4-amino-5-imidazolecarboxamide for purine biosynthesis is not conclusive evidence that this compound, *per se*, is a normal intermediate in the major synthetic pathways of nucleic acid purines. Other investigators have presented evidence indicating that the riboside or the ribotide of 4-amino-5-imidazolecarboxamide or its formyl derivative was the key intermediate in the biosynthesis of nucleic acid purines, rather than 4-amino-5-imidazolecarboxamide, *per se*. Nevertheless, 4-amino-5-imidazolecarboxamide-4-¹⁴C can still be used as a tool to compare the purine biosynthesis in normal and neoplastic tissue, and to get further information on the mechanisms of X-irradiation effect on purine biosynthesis because of its utilization by body enzymes for the production of nucleic acid purines.

THE EFFECT OF THYROID HORMONE AND OF PROPYL-
THIOURACIL ADMINISTRATION UPON THE SPREADING
REACTION WITH AND WITHOUT HYALURONIDASE
IN ADRENALECTOMIZED, ADRENAL CORTEX EX-
TRACT TREATED, AND INTACT WHITE RATS

by BERNARD DAVID DAITZ*

Results are reported on observations of the "spreading reaction" in white rats (Sherman strain) subjected to operative, injection, and feeding procedures designed to produce hyper- and hypo-function of the adrenal cortex and the thyroid gland.

The spreading reaction is the spread through the tissues of a colored solution injected at any given site, most commonly in the dermis. It is a manifestation of complex reactions which take place in the ground substance—the amorphous, intercellular, gel-sol material found in connective tissue. Changes in the permeability of this substance, the main chemical constituent of which is hyaluronic acid, have been demonstrated by various workers.

It has also been shown that a particular enzyme, hyaluronidase, is specific to hyaluronic acid, and that its action on the acid causes depolymerization with a concomitant decrease in viscosity (increase in permeability). There is evidence that the permeability of this ground substance which serves actually as a barrier to all particulate matter seeking its way to or from tissue cells, whether as normal metabolites or foreign matter, is controlled by some mechanism in the body. It is also known that extraneous factors such as environmental temperatures, drugs, infection, and acute and chronic stressors influence the permeability of the ground substance and thus the spreading effect.

It is considered that changes in tissue permeability may play an important role in the capacity of an organism to adapt to a variety of stressful agents. Since adaptation to stress has been shown to be intricately related to the function of the endocrine system, the relationship between the state of permeability or "tone" of the ground substance has become of interest. The resistance to infection, the dynamics of inflammation, the deposition of mucin-like substances in certain pathological conditions, the dynamics of ionic equilibrium maintenance, are among some of the manifestations which would be directly affected by a change in the physical nature of the cellular matrix.

The present investigation was designed to examine the changes in tissue permeability, manifested by corresponding variations in the spreading

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effect, which resulted from alterations of thyroid function by thyroid hormone and by propylthiouracil administration to the following groups of white rats: (1) those which had previously been subjected to bilateral adrenalectomy, (2) those treated with daily injected doses of adrenal extract, and (3) those whose adrenal function was not modified by any specifically designed procedure (control animals).

METHODS

A total of eighty animals, equally divided between males and females, were used in the study. An initial determination of the spreading effect was made on the entire group of animals. A third of the animals were then adrenalectomized, another third given daily subcutaneous injections of adrenal cortical extract, and the remaining third kept as controls. The animals in each treatment category were then subjected to another determination of the spreading effect. Following this, the animals in each of the three primary treatment categories just mentioned were further subdivided into three secondary treatment groups. The animals in one of these were supplied thyroid hormone in their drinking water; those in the second category were similarly given propylthiouracil, while those in the third category were given tap water. The nine treatment categories were thus C-C (control-control), C-PT (control-propylthiouracil), (C-T) (control-thyroid), ACE-C (adrenal cortical extract-control), ACE-PT (adrenal cortical extract-propylthiouracil), ACE-T (adrenal cortical extract-thyroid), ADX-C (adrenalectomized-control), ADX-PT (adrenalectomized-propylthiouracil), and ADX-T (adrenalectomized-thyroid). Four additional spreading effect determinations were then carried out on all animals during the remainder of the thirty-six day period of study.

SPREADING REACTION DETERMINATION

The actual test of the spreading effect was preceded 24 hours by clipping and depilating the entire dorsum of each animal. Excoriation of the skin was minimized by a coating of lanolin applied immediately following the depilation procedure. The spreading reaction itself involved the intradermal injection of 0.05 cc. of a hemoglobin-saline solution at two sites on the animal's back (one injection solution containing the addition of 7.5 turbidity-reducing units of hyaluronidase) while the animals were maintained under nembutal and supplemental ether anesthesia. The injected hemoglobin was visible through the skin as a somewhat raised area resembling the appearance of a hematoma. Immediately upon completion of the injection, a frosted acetate strip was placed over the area of spread and the margins of the area clearly traced

with pencil. This provided a permanent record of the size of the area, which later was accurately measured with a planimeter.

Since the hemoglobin diffused into the dermal tissue over a period of time, the changes in size of the areas were traced at intervals of 2, 4, 8, 12, 16, 20, 30, 40, 60, 80, 100, and 120 minutes following the first tracing. The injection containing the enzyme hyaluronidase diffused to a markedly greater area than did the injection containing hemoglobin alone. It was found that all areas reached their maximum level of spread by the eleventh set of tracings which was 80 minutes after injection of each of the hemoglobin solutions. Thus, these areas (the 80-minute areas of spread) were used to determine the differences in amount of spread effected by a diminished or increased endocrine function.

STATISTICAL METHODS

The mean, standard error of the mean, and confidence limits for the 5 per cent level of significance were computed for each of the treatment categories studied in the six successive SR determinations. Analysis of variance was undertaken as the statistical method of choice for a factorial design experiment such as this.

The computations involved calculation of "F" for the principal effects, and for the interactions of the first, second and third orders. Because the interactions involving sex differences were generally homogeneous, Bartlett's Test of Homogeneity of Variance was applied to the 16 interactions involved. Since the corrected χ^2 was found to lie between the 0.10 and 0.05 levels, the data do not warrant the assumption of anything other than homogeneity with respect to sex differences. The sex difference interactions were thereupon combined into a single remainder with 108 degrees of freedom and the "F" test repeated. The significant effects were then broken down into single degrees of freedom.

The reactions constituted a logarithmic time series. The orthogonal coefficients were therefore applied to extract the sums of squares for curvilinear regression. Deviations from the quadratic barely exceeded the 5 per cent level, practically all of the residual lying in the fitting of the fifth power. The best time fit was therefore a logarithmic quadratic with zero linear component. Since it is symmetrical and does not interact significantly above zero order, it was ignored for further testing.

Values for "t" based on orthogonal subdivision of the sums of squares were computed for the main effects and the selected interactions.

RESULTS

Statistical appraisal of the differences among the means of the measurements obtained from those injections containing only hemoglobin (con-

trol) showed no evidence of significant differences as a result of alterations in normal endocrine function (adrenalectomy, adrenal cortex extract treatment, etc.). The differences between the areas of spread of control injections and those containing hyaluronidase were always highly significant statistically. Furthermore, there was a marked change in augmentation ("enhancement") or restriction ("inhibition") of the spread of the indicator solution when accompanied by hyaluronidase when the areas of spread were determined at different intervals of days (spread reaction SR-1 through 6).

The adrenalectomized animals, as a group, showed a larger 80-minute area of spread with hyaluronidase than did the animals in either of the other two primary treatment categories (ACE and C). In these animals the spreading pattern revealed a progressive enhancement during the 10-day period following removal of the adrenals. The next 9-day period was characterized by a plateau during which the spreading reaction appeared to remain at the maximum level. The third phase seemed to be one of definite inhibition. The enhancement of spreading was manifest in the adrenalectomized animals but remained surprisingly relative to the variations shown by the intact, untreated animals.

The pattern of spread in the animals in the ACE-treatment category was essentially that of inhibition as compared to that noted in the adrenalectomized rats and that in the controls. Except for the difference in the degree of spreading, the pattern in the ACE-C animals showed an early enhancement phase like that seen in the ADX-C animals. This was followed in turn by the "plateau", and then the inhibition phases observed in the ADX animals.

An explanation for the augmentation at SR-3, SR-4, and SR-5 of the spreading effect is not immediately clear. Among the possibilities is the consequence of the effect of repeated injections of hyaluronidase. It may be thought that such repeated injections of hyaluronidase might break down the ground substance as a consequence of the depolymerization of hyaluronic acid. Seifter, however, reported that "the dermal barrier restores itself fairly soon after the injection of even huge amounts of hyaluronidase, and there is no question of permanent injury". This would appear to eliminate hyaluronidase as a factor in explaining the increase in enhancement noted in the ACE-C and C-C animals.

Hemaglobin used as the coloring matter in all of the intradermal injections may, on the other hand, be responsible for the enhanced spreading effect. It undoubtedly had antigenic properties since it was heterologous. While gross examination of the injection sites on the day following each SR determination failed to reveal either inflammation or swelling, it is possible that the hemoglobin may have evoked a tissue

response which was accompanied by an increase in endogenous "spreading factors".

Alteration of thyroid function which followed treatment with thyroid hormone and with propylthiouracil resulted in significant changes in the spreading reaction as compared with the reactions noted for the adrenalectomized; the adrenal cortex extract-treated; and the intact, untreated control animals which received no thyroid hormone or propylthiouracil.

The data indicate that propylthiouracil produced restriction of the spreading reaction. This action was most significant in the animals which had been adrenalectomized prior to treatment with propylthiouracil. This drug likewise affected the spreading reaction in the adrenal cortex extract-treated animals and those which comprised the intact controls; however, the degree of "inhibition" noted in these animals was somewhat less than that seen in the adrenalectomized rats. The inhibition which was found in the control animals treated with propylthiouracil suggests that whatever action propylthiouracil did have upon the adrenal cortex, the effect upon the spreading reaction was not that which was observed in adrenalectomized animals which did not receive propylthiouracil. Furthermore, adrenalectomized animals treated with propylthiouracil showed a greater degree of "inhibition" than did the adrenal cortex extract-treated, or intact control animals. The possibility exists that the propylthiouracil fed to the animals produced a hypothyroid state accompanied by myxedema, and that this myxedema was accompanied by an increase in the hyaluronic acid content in the skin. This could logically account for the inhibition noted in the propylthiouracil treated animals.

The most striking effect which thyroid hormone produced was that observed in the adrenalectomized animals which received this preparation. In these animals, the spread of hyaluronidase appeared to have been markedly reduced during the first nine days following start of thyroid hormone treatment. This is evident in a comparison with adrenalectomized animals which received no thyroid hormone. The adrenal cortex extract-treated animals which were given thyroid hormone also showed relative inhibition when compared with adrenal cortex extract animals which received no thyroid hormone. The difference in response does not appear significant. This same lack of clear-cut differences was found in a comparison of control animals with those which received thyroid hormone and no other treatment (C-T).

SUMMARY AND CONCLUSIONS

The effect of thyroid hormone and of propylthiouracil administration upon the intradermal spreading of hemoglobin injected with and without hyaluronidase has been studied in adrenalectomized (ADX), adrenal cortex extract-treated (ACE), and intact control (C) male and female

white rats of the Sherman strain. The plan of study was designed to permit the following comparisons to be made:

1. "Before-and-After" treatment differences in each of the animals.
2. "Before-and-After" treatment differences in and among the nine treatment categories (ADX-C, ADX-T, ADX-PT, ACE-C, ACE-T, ACE-PT, C-C, C-T, and C-PT) which were studied.
3. Changes in the spreading reaction produced in relation to the time interval between completion of the injection of the hemoglobin solution and the measurement of the consequent areas of spreading.
4. Changes in the spreading reaction produced in relation to the length of time each of the treatments was administered (up to a maximum of 36 days).

Analysis of the results which were obtained permits the following conclusions:

1. No statistically significant differences in the effects of the various treatments upon the spreading reaction could be attributed to sex differences in the animals.
2. The differences among the means of the 80-minute areas of spread produced by the injection of hemoglobin solution without hyaluronidase in the animals of the various treatment categories were not statistically significant.
3. Hemoglobin when injected intradermally together with hyaluronidase spread more rapidly and to a greater extent in all animals studied than did hemoglobin solution injected without hyaluronidase.
4. The 80-minute areas of spread produced in the adrenalectomized animals by the intradermal injection of hemoglobin solution containing hyaluronidase were significantly greater at each of the 5 spreading reaction (SR) tests which were made following adrenalectomy, than corresponding areas of spread noted for the animals in the other treatment categories.
5. Adrenalectomized animals which were subsequently treated with propylthiouracil showed marked and highly significant restriction of hemoglobin-hyaluronidase spreading which was evident 18 days (at SR-5) after administration of propylthiouracil was started, and which persisted until the conclusion of the experiment 30 days after initiation of propylthiouracil.
6. Adrenalectomized animals which were treated with thyroid hormone showed statistically significant restriction of hemoglobin-hyaluronidase spreading, compared with adrenalectomized animals which received no thyroid, at least for the first nine days following the start of thyroid hormone treatment. Thereafter, enhancement of spread was observed in the adrenalectomized thyroid-treated animals so that by 18 days following the start of thyroid hormone, the ADX-T animals produced areas of spread of a magnitude comparable to that noted in the ADX-C

animals at this time, and for the final observation (SR-6) 30 days following the initiation of thyroid hormone treatment.

7. Treatment with adrenal cortex extract produced restriction of the spread of hemoglobin-hyaluronidase, which was evident 13 days after such treatment was begun, as compared with animals which were adrenalectomized, and with those which served as intact, untreated controls. This relative inhibition was statistically significant as compared with the spreading reaction in the adrenalectomized animals, but not statistically significant when compared with the intact, untreated controls. This apparent equivocal result with respect to the intact, untreated control animals has been discussed.

8. Treatment with thyroid hormone or with propylthiouracil of animals which were likewise given adrenal cortex extract failed to produce any statistically significant alteration in the behavior of the spreading of hemoglobin-hyaluronidase, though both of these agents in the adrenal cortex extract-treated animals produced restriction of spreading as compared with that noted in the animals given adrenal cortex extract only.

9. Propylthiouracil administered to otherwise untreated animals produced restriction of spreading which was evident nine days following the start of propylthiouracil treatment, as compared with animals which received no treatment whatever.

10. Administration of thyroid hormone in otherwise untreated animals produced no statistically significant alteration in the spreading effect as compared with that observed in intact, untreated controls.

11. Without exception, observations of the spreading reaction on the third SR (9 days after the start of the experiment) revealed an increase in the means computed for the 80-minute areas of spread produced by hemoglobin-hyaluronidase, as well as by hemoglobin solution lacking hyaluronidase. This "enhancement" was noted in varying degrees in the ADX-C, ACE-C, and C-C treatment categories at each SR test subsequent to SR-3 and until SR-5, at which point restriction of spreading appeared to be characteristic.

The results have been examined and interpreted in association with the findings of other investigators, and explanations offered for some of the mechanisms which may be involved. It seems warranted to emphasize the importance of precise characterization of the behavior of the spreading reaction, for such terms as "enhancement" and "inhibition" have meaning only when they signify real deviations from some previously selected standard value. Of importance also is the need for accurate description of techniques involving relatively standardized treatment agents and dosages, and for more accurate methods for obtaining measurements of the areas of spread. In the present study a method for making such measurements has been described; also, all descriptions of

the behavior of the spreading reaction have been related to carefully defined standards.

It is evident that the scope of the present study necessarily restricted the amount of information which could be derived regarding the mechanisms which are involved in alterations in thyroid hormone availability as these relate to the permeability of the ground substance. That such changes may affect the permeability of the ground substance appears likely on the basis of the findings reported here. Further study of this problem is warranted and should include histological and biochemical as well as physiological techniques. It would be interesting to follow the effects of thyroid hormone and of propylthiouracil for a period beyond that selected for this study. It would also be worthwhile to investigate more closely the phenomenon of relative "enhancement" which was found in the animals of most of the treatment categories during the initial phases of study.

SOME ASPECTS OF THE MECHANISM OF TOXICITY AND PHYSIOLOGICAL DISPOSITION OF THIOGLYCOLATE

by MARIAN VIRGINIA FREEMAN*

Thioglycolic acid, one of the simplest of the organic sulfhydryl compounds, has the chemical formula, $\text{HS-CH}_2\text{-COOH}$. Various sulfhydryl compounds have been shown to have an effect on the proliferative reaction of the skin and the thyroid, on the radiation syndrome, on certain symptoms of diabetes, on diuresis, and on the disulfide bonds in the hair molecule. This last effect is the basis for its principal use at the present time as the active ingredient in 90 per cent of the 90 million cold hair waves used in this country a year.

Reports of alleged injury from its local use include dermatitis, temporary baldness, weakness, nausea, emesis, blood dyscrasias, liver damage, optical neuritis, and middle ear damage.

The approximate LD_{50} intraperitoneally to rats was found to be 126 milligrams per kilogram and to mice was found to be 505 milligrams per kilogram which indicated that acutely on a weight basis, thioglycolate was more toxic to rats than to mice as is the case for many compounds. Thioglycolate was absorbed as rapidly if not as uniformly from the gastrointestinal tract as from the peritoneal cavity as reflected by the similar LD_{50} 's for mice by the oral and intraperitoneal routes. Rats were able to tolerate chronic doses of 50 and 75 milligrams per kilogram for six weeks without gross effects; however, at doses of 100 and 125 milligrams per kilogram the animals did not gain weight as well as the controls. Symptoms of thioglycolate toxicity were emesis, defecation, salivation, lacrimation, increased heart rate, increased amplitude of T wave of electrocardiogram, tremors, increased gastrointestinal peristalsis, weakness, hyperexcitability, dyspnea, anorexia, depression, and death in convulsions of respiratory failure.

In the fasted rabbit, thioglycolate did not cause an immediate effect on the blood sugar level, but by six hours, the level had significantly decreased. Terminally both rats and rabbits showed a marked hypoglycemia. Similar amounts of the sulfhydryl groups in the form of cysteine or dithiopropanol did not cause subnormal levels of blood sugar in six hours. Either intraperitoneal or oral administration of glucose significantly increased the amount of thioglycolate necessary to cause death. No sugar was found in the urine of non-diabetic animals receiving doses that decreased blood sugar indicating that a lowering of the renal threshold to glucose had not occurred. Thioglycolate decreased the amount of sugar excreted by diabetic animals. When the animals were not given

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the drug, the glycosuria returned to the previous diabetic levels indicating that the decrease caused by the thioglycolate was not due to a permanent effect on an organ or function. Thioglycolate also reduced the polydipsia, and polyphagia, and polyuria of diabetic rats. The comparative growth rates on non-diabetic animals receiving and not receiving the drug and the diabetic animals receiving and not receiving the drug show that after 16 weeks of chronic administration there was a 15 per cent decrease in growth of non-diabetic animals and a 15 per cent increase in growth in the diabetics receiving the drug over the diabetics not receiving the drug.

Liver glycogen was measured in mice fasted 24 hours then given glucose plus either sodium thioglycolate or no drug. Amount of glycogen present in the liver of animals given glucose plus the thioglycolate was much less than the amount in animals given glucose only. Muscle glycogen was measured in fasted rats given glucose plus either thioglycolate or no drug. There was no significant difference in the percentage of glycogen present in the treated and untreated animals. Respiratory quotients were also measured in rats given either glucose alone or glucose plus thioglycolate. An average respiratory quotient of 0.753 was found for animals receiving glucose alone and an average respiratory quotient of 0.791 for animals receiving glucose plus thioglycolate indicating an increased oxidation of carbohydrate and/or a conversion of carbohydrate to fat.

Urinary nitrogen excretion was measured in both non-diabetic and diabetic rats with and without thioglycolate. An increased urinary nitrogen after thioglycolate was observed in the non-diabetic animals which together with the hypoglycemia points to a stimulation of gluconeogenesis. This would be another of the body's attempts to maintain homeostasis with relation to blood sugar. The decrease seen in the diabetic animal indicates that an increased gluconeogenesis was not occurring in the diabetic animals.

Absorption was very rapid from the skin as indicated by the fact that there were already increases in urinary sulfur within one hour after topical application. The sulfur increases at one hour represented from 5 to 8 per cent of the injected dose. By five hours from 30 to 40 per cent was excreted. After administration of the thioglycolate tagged with the radioactive sulfur 35 it was found that the total increase in sulfur in urine after thioglycolate administration was not a part of the original drug. Thus the above percentages did not represent exact amounts of thioglycolate excreted per unit time. However, they were evidence that the thioglycolate is rapidly absorbed as this increased sulfur excretion must be either from the thioglycolate or due to an effect of the thioglycolate upon the body protein after absorption.

Comparison of the increases in urinary sulfur 4 hours after topical

doses of 330 milligrams per kilogram and 660 milligrams per kilogram show that the amount of thioglycolate absorbed and excreted per unit time was not dependent upon the total amount present, i. e., more was not necessarily absorbed and excreted because more was present on the skin. However the fact that those given 660 milligrams per kilogram died within 24 hours while those given 330 milligrams per kilogram did not, indicated that while the rate of absorption was not affected by the amount present, as might be expected, the total amount absorbed over an extended period of time was related to the amount present. The highest concentration of radioactivity after administration of the labeled drug was in decreasing order in the kidney, lung, spleen, and liver. The highest concentration in the kidney was not surprising since the drug is excreted in the urine. In view of the high concentration in the lung, tests for exhaled hydrogen sulfide after administration of the drug were made. None was found however. From 60 to 80 per cent of the thioglycolic acid injected was excreted within 24 hours by the rabbit. More was excreted as neutral sulfur and organic sulfate than as inorganic sulfate. The total sulfate excreted by the animals was approximately the same irrespective of dose indicating that the rabbit's ability to oxidize sulfur to sulfate was probably working to its maximum capacity and the remainder was being excreted as neutral sulfur. From 60 to 100 per cent was excreted by the rat in the first 24 hours. More was excreted as inorganic sulfate and neutral sulfur than as organic sulfate. Measurable quantities were not exhaled as hydrogen sulfide.

THE INFLUENCE OF ASCORBIC ACID ON THE ACTION OF ADRENAL CORTICAL HORMONES IN CERTAIN ASPECTS OF CARBOHYDRATE METABOLISM

by MELVIN HAROLD HEIFFER*

The investigations of Britton and his co-workers stimulated interest in the role that the adrenal cortex played in carbohydrate metabolism. The cortex was found to be necessary in order to maintain carbohydrate levels in starvation. The work of other investigators pointed out that the adrenal steroids caused a shift in the metabolic processes so that carbohydrate levels were maintained at an expense of protein and fat. In addition, the utilization of carbohydrate was found to be depressed under certain conditions.

Dugal and Therien found that ascorbic acid pretreatment prolonged the survival of normal rats subjected to cold stress. However, it was demonstrated by Bacchus *et al.* that the adrenal cortex was necessary for this protective action of the vitamin. Histo-chemical examinations revealed that the liver glycogen in adrenalectomized rats subjected to cold stress was not maintained even when ascorbic acid was administered.

It was of interest to investigate what relationships existed between ascorbic acid pretreatment and the actions of cortical steroids in carbohydrate metabolism. In approaching this problem, three major experiments were performed.

The first experiment was conducted on male Swiss mice that were adrenalectomized at least three days before the experiment was started. The mice were maintained on Purina Laboratory Chow and 0.89 per cent saline. This experiment consisted of two parts. The first part was conducted on adrenalectomized mice with a body weight range of 25-30 gms. These mice were divided into three groups. Group I mice received single intraperitoneal injections of ascorbic acid (sodium ascorbate, injectable, Roche), 100 mgms. per 100 gms. of body weight, on the evening before the experiment. Early the next morning these same animals received similar amounts of ascorbic acid. Immediately following this second injection of ascorbic acid, the mice received single subcutaneous injections of cortisone acetate (cortone, Merk), 4.0 mgms. per 100 gms. body weight. Group II mice received treatment similar to that of those in Group I except that in this case the ascorbic acid was replaced by intraperitoneal injections of physiological saline. Group III mice received no treatment. All of the animals were sacrificed four hours after the injection of cortisone. Liver tissue was weighed in tared centrifuge tubes containing warm potassium hydroxide, and glycogen determinations

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were conducted according to the method of Good, Kramer, and Somogyi. Sugar determinations were made by the Folin-Wu method. The data were presented in Table 1 in which the liver glycogen concentration was presented as milligrams of glucose per one gram of liver weight. It could be seen that the liver glycogen of animals receiving cortisone and saline was significantly higher than that of those animals that received no hormone. The liver glycogen content in the animals which received cortisone and ascorbic acid (Group I) was significantly higher than that of the animals which received cortisone and saline (Group II).

The second part of this experiment was carried out on male Swiss mice weighing from 20 to 25 grams that had been adrenalectomized three days previously. The procedure that was suggested by Venning, Kazmin and Bell for the assay of corticoids was adopted in this experiment. All food was withdrawn at 5:00 P.M. the night before the experiment. The mice had access to only 0.89 per cent sodium chloride. The adrenalectomized mice were divided into four groups. Group I animals received a priming dose of ascorbic acid the previous night. The following morning these animals also received seven subcutaneous injections of a menstruum containing cortisone and glucose. The total dose of cortisone amounted to 70 mgms. and the total amount of glucose was 70 mgms. This group of mice received two injections of ascorbic acid, one at the time of the first cortisone-glucose injection and the other at the time of the third cortisone-glucose injection. The dose of ascorbic acid was 100 mgms. per 100 gms. of body weight. The animals in Group II were treated like those in Group I, except that these animals received physiological saline solution instead of intraperitoneal injections of ascorbic acid. Group III mice received seven injections of glucose, amounting to 70 mgms., but no cortisone or ascorbic acid. The mice in Group IV received intraperitoneal injections of ascorbic acid at the same time Group I mice received their ascorbic acid. The seven injections mentioned above were given in the course of six hours. All animals were sacrificed one hour after the last injection. The data were presented in Table 2 in which liver glycogen, as glucose, was presented as milligrams per 10 grams of body weight. This was the method that Venning *et al.* recommended. It was demonstrated that the liver glycogen content of Group II mice was 466 per cent greater than that of Group III. The livers of the mice in Group I contained 866 per cent more glycogen than those of Group III mice. The liver glycogen content in the vitamin-cortisone animals was significantly greater than that of the cortisone-saline mice ($P = < 0.01$).

The second experiment was conducted on female Wistar rats that were either adrenalectomized or demedullated. All animals were maintained on Purina Laboratory Chow and 0.89 per cent saline. One week after the operations, tap water was substituted for the saline in the

demedullated animals. The adrenalectomized animals were divided into four groups and insulin tolerance tests were performed. Group A was pretreated with cortisone acetate (0.6 mgms./100 gms.) by subcutaneous injection and with ascorbic acid (10 mgms./100 gms.) by intraperitoneal injection. The rats in Group B received the same amount of cortisone acetate, but were treated with isotonic saline in place of ascorbic acid. The animals in Group C received ascorbic acid alone, and no cortisone acetate. Group D rats received only a saline injection. All the animals of all groups were challenged with various doses of insulin $2\frac{1}{2}$ hours after the pretreatments. Eight animals of Group A, eight of Group B, and five animals each of Group C and Group D were challenged with 0.25 units of regular insulin (Iletin, Lilly) per kilogram of body weight, subcutaneously. Blood samples were taken at the following times: just before any treatment, $2\frac{1}{2}$ hours after pretreatment, one, two, three, and four hours after the insulin injection. All animals were fasted overnight (18 hours).

The data were presented in Figure 1 and Table 3. No significant differences were noted in the blood glucose levels before and after the injection of either ascorbic acid or cortisone, or of cortisone and ascorbic acid. The insulin tolerance tests indicated that both the saline-pretreated and the ascorbic acid-pretreated adrenalectomized rats were sensitive to the challenging dose of insulin. There was a significant decrease in the blood sugar level at the end of the first hour following the injection of insulin. Cortisone pretreatment rendered marked protection to Group B rats. All of these animals survived the dose of insulin and the hypoglycemia was not as intense. Group A animals (those that received ascorbic acid plus cortisone) exhibited a marked resistance to the challenging doses of insulin. There was a significant hypoglycemia in this group only at the end of the first hour following insulin injection, and the blood glucose levels were normal at the subsequent hourly intervals. In addition, all of these rats survived the insulin dose.

In a supplementary study four animals with the same pretreatment as Group A, and four rats with the same pretreatment as Group B were challenged with 0.5 units of insulin per kilogram. It was observed that there was a significant difference between the hypoglycemic responses in these groups at the end of the first hour. The animals which received ascorbic acid plus cortisone did not suffer as profound a drop in blood glucose as did the saline-cortisone group.

The adrenal demedullated female Wistar rats were used 5 to 6 weeks after the operation, by which time the adrenal cortex is completely regenerated according to Greep and Deane. The animals were divided into four groups and fasted over night (18 hours). Group A contained four rats which received pretreatment with ascorbic acid

(10 mgms./100 gms.) intraperitoneally, and corticotrophin (0.1 mgms./100 gms.) in two subcutaneous injections one hour apart. Group B consisted of four rats which received isotonic saline, and corticotrophin as did Group A. Group C contained four rats which received only ascorbic acid. Group D consisted of four rats which received only isotonic saline. The animals in Groups A and B were given 0.45 units of insulin per kilogram, while those in Groups C and D received smaller doses (0.3 units/kg.). Blood glucose was determined before any pretreatment, one, two, three, and four hours after the injection of insulin. It can be seen from Figure 2 and Table 3 that the pretreatments failed to alter significantly the blood glucose levels. Groups C and D showed similar insulin tolerance curves. The hypoglycemic response in the rats of Group B was greater than that of Group A. This was especially true at the end of the second and third hours after insulin ($P < 0.01$). Both of these groups showed similar blood sugar levels at the end of four hours.

The third experiment was conducted on female adrenalectomized Wistar rats weighing from 170 to 200 grams. The animals were administered phloridzin (50 mgms. in olive oil/animal, subcutaneously). They were divided into four groups. Group A, which consisted of eight animals, received cortisone acetate (1 mgm./100 gms., subcutaneously) plus ascorbic acid (10 mgms./100 gms., intraperitoneally). Group B contained five animals which received cortisone acetate plus physiological saline solution instead of ascorbic acid. Group C consisted of five animals that received ascorbic acid treatment only. The animals in Group D consisted of four rats which received only intraperitoneal injections of physiological saline.

The animals were then placed in individual metabolism cages and urine was collected over a 19 hour period. All of the rats had been fasted for 24 hours before receiving the phloridzin injection. The urine was analyzed for total glucose and nitrogen, and calculated on the basis of 100 grams of body weight. Urinary glucose: nitrogen ratios were also calculated. It can be seen from Table 4 that the glucose levels of the animals in Group C were not significantly different from those of the animals of Group D. The urinary glucose in Group B rats was higher than that in either Groups C or D. The urinary glucose of Group A animals was significantly higher ($P < 0.01$) than that of Group B rats. Similar findings were noted in regard to the urinary nitrogen values. Group B nitrogen levels were higher than either Group C and D. The urinary nitrogen values were markedly higher in the animals of Group A. The D:N ratio was especially elevated in this group.

The data that were presented in these three investigations indicated that ascorbic acid potentiated the action of C-11-oxygenated steroids on carbohydrate metabolism. The vitamin supported the hor-

mone in the deposition of glycogen in the liver of the mouse, while exogenous ascorbic acid in the absence of cortical hormone failed to alter the liver glycogen. The data indicated that ascorbic acid enhances the insuline tolerance of cortisone treated adrenalectomized rats, and of corticotrophin (ACTH) treated adrenal-demedullated rats. The vitamin did not effect the insulin tolerance when it was given alone. In addition, ascorbic acid was found to enhance the excretion of urinary glucose and nitrogen in cortisone treated adrenalectomized phloridzinized rats.

ESTIMATES AND ASYMPTOTIC DISTRIBUTIONS OF CERTAIN STATISTICS IN INFORMATION THEORY

by JOHN PAUL HOYT*

Consider the k -variate populations, π_1 and π_2 defined respectively by the probability densities $f_1(x_1, x_2, x_3, \dots, x_k)$ and $f_2(x_1, x_2, x_3, \dots, x_k)$ if π_1 and π_2 are continuous or by the probabilities $f_1(x_1, x_2, x_3, \dots, x_k)$ and $f_2(x_1, x_2, x_3, \dots, x_k)$ if π_1 and π_2 are discontinuous. Given a sample, O_n , of n independent observations, the information in the sample for discriminating between π_1 and π_2 is defined as

$$\sum_{a=1}^n \log \frac{f_1(x_{a1}, x_{a2}, x_{a3}, \dots, x_{ak})}{f_2(x_{a1}, x_{a2}, x_{a3}, \dots, x_{ak})} \text{ where}$$

$(x_{a1}, x_{a2}, x_{a3}, \dots, x_{ak})$ are the sample values in the a th observation. This is designated by the symbol $i(1:2, O_n)$.

The mean information per observation from π_1 for discriminating between π_1 and π_2 is defined as the expected value of $i(1:2, O_1)$ and designated by the symbol $I(1:2)$ so that

$$(S.1) \quad I(1:2) = E(i(1:2, O_1)) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} f_1(x_1, x_2, x_3, \dots, x_k) \log \frac{f_1(x_1, \dots, x_k)}{f_2(x_1, \dots, x_k)} \prod_{a=1}^k dx_a.$$

The divergence between π_1 and π_2 is defined as

$$(S.2) \quad J(1, 2) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} [f_1(x_1, \dots, x_k) - f_2(x_1, \dots, x_k)] \log \frac{f_1(x_1, \dots, x_k)}{f_2(x_1, \dots, x_k)} \prod_{a=1}^k dx_a \text{ or}$$

$$(S.3) \quad J(1, 2) = I(1:2) + I(2:1).$$

For the case where π_1 is the k -variate normal population with probability density

$$(S.4) \quad f_1(x_1, x_2, x_3, \dots, x_k) = \frac{1}{|\sigma_{(1)}|^{\frac{1}{2}} (2\pi)^{\frac{k}{2}}} e^{-\frac{1}{2}(x-u_{(1)})' \sigma_{(1)}^{-1} (x-u_{(1)})}$$

and π_2 is the k -variate normal population with probability density

$$(S.5) \quad f_2(x_1, x_2, x_3, \dots, x_k) = \frac{1}{|\sigma_{(2)}|^{\frac{1}{2}} (2\pi)^{\frac{k}{2}}} e^{-\frac{1}{2}(x-u_{(2)})' \sigma_{(2)}^{-1} (x-u_{(2)})}$$

where the σ 's stand for the matrices of population variances and covariances, the u 's stand for the matrices of population means and x' is the row matrix $(x_1, x_2, x_3, \dots, x_k)$, (x' being the transpose of x), it is shown that

$$(S.6) \quad i(1:2, O_n) = \frac{n}{2} \log \frac{|\sigma_{(2)}|}{|\sigma_{(1)}|} + \frac{1}{2} \sum_{a=1}^n (x_{(a)} - u_{(1)})' \sigma_{(1)}^{-1} (x_{(a)} - u_{(1)}) - \frac{1}{2} \sum_{a=1}^n (x_{(a)} - u_{(2)})' \sigma_{(2)}^{-1} (x_{(a)} - u_{(2)})$$

and

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(S.7) $I(1:2) = \frac{1}{2} \log \frac{|\sigma_{(u)}|}{|\sigma_{(v)}|} + \frac{1}{2} \text{tr } \sigma_{(u)} \sigma_{(v)}^{-1} - \frac{k}{2} + \frac{1}{2} (u_{(v)} - u_{(u)})' \sigma_{(v)}^{-1} (u_{(v)} - u_{(u)})$

where $\text{tr } \sigma_{(u)} \sigma_{(v)}^{-1}$ stands for the trace of the product of the matrices $\sigma_{(u)}$ and $\sigma_{(v)}^{-1}$, while

(S.8) $J(1, 2) = \frac{1}{2} \text{tr } \sigma_{(u)} \sigma_{(v)}^{-1} + \frac{1}{2} \text{tr } \sigma_{(v)} \sigma_{(u)}^{-1} + \frac{1}{2} (u_{(v)} - u_{(u)})' (\sigma_{(u)}^{-1} + \sigma_{(v)}^{-1}) (u_{(v)} - u_{(u)})$.

The characteristic function of the distribution of $\frac{i(1:2, O_n)}{n}$ for the case of sampling from a k -variate normal population is found and from this function, the mean and variance of the distribution are found.

Approximations to the frequency function of $\frac{i(1:2, O_n)}{n}$ for the single variate case are then given in the form of non-central chi-square frequency functions and in Appendix I is included an exact frequency function of $\frac{i(1:2, O_n)}{n}$ expressible in terms of the modified

Bessel function of the first kind.

We next considered an estimate of $I(1:2)$ designated as

(S.9) $\bar{I}(1:2) = \frac{1}{2} \log \frac{|\sigma|}{|s|} + \frac{1}{2} \text{tr } s\sigma^{-1} - \frac{k}{2} + \frac{1}{2} (\bar{x} - u)' \sigma^{-1} (\bar{x} - u)$ where σ is the matrix

of population variances and covariances, u is the matrix of population means, s is the matrix of sample variances and covariances, and \bar{x} is the matrix of sample means.

The characteristic function of the distribution of $2n\bar{I}(1:2)$ was found and from this were found approximations to the frequency function in the form of chi-square frequency functions with asymptotic frequency functions for large samples being that of chi-square

with $\frac{k(k+3)}{2}$ degrees of freedom. Another approximation to the frequency function of $2n\bar{I}(1:2)$ was derived in Appendix I. This took the form of a modified Bessel function of the first kind.

The independence of $n \left[\log \frac{|\sigma|}{|s|} + \text{tr } s\sigma^{-1} - k \right]$ and $n(\bar{x} - u)' \sigma^{-1} (\bar{x} - u)$ led to a considera-

tion of the distribution of $n \left[\log \frac{|\sigma|}{|s|} + \text{tr } s\sigma^{-1} - k \right]$ when the sampling is from a k -variate normal population as before. The approximations to the frequency function of the dis-

tribution of $n \left[\log \frac{|\sigma|}{|s|} + \text{tr } s\sigma^{-1} - k \right]$ resemble those of $2n\bar{I}(1:2)$ except that the number of degrees of freedom in the latter case is two less than in the former.

A summary of various statistics and parameters which have appeared in the literature and which are similar to various terms of $2n\bar{I}(1:2)$ or to various terms of $2nI(1:2)$ respectively was given.

Finally, examples were given showing how the statistic $n \left[\log \frac{|\sigma|}{|s|} + \text{tr } s\sigma^{-1} - k \right]$ could be used to test hypotheses concerning the matrix of population variances and covariances.

THE PROBLEM OF REPLACEMENT AND DIFFERENTIATION OF THE INTESTINAL EPITHELIUM

by STANLEY FLETCHER PATTEN, JR.*

Ever since the introduction of the "wander theory" by Bizzozero in 1888, the intestinal mucosa has received considerable attention. This attention has been directed toward the origin, differentiation, death, and ultimate replacement of the cells of the intestinal epithelium. Despite voluminous data on this subject, the problem of the replacement of this layer is still a controversial issue and a chief concern of investigators exploring the fundamentals of normal and abnormal growth.

The region of disagreement appears to concern the secondary replacement of the intestinal epithelium or its replacement during the adult life of the organism. Most investigators will agree that the intestinal mucosa is derived initially from the embryonal endoderm and that the first cell to differentiate is of the columnar variety. However, are the goblet cells, Paneth cells, and argentaffine cells then derived from these columnar cells, or do they possess separate origins? Assuming that all the epithelial elements of the intestine are derived from cells of the columnar variety, the problem of replacement of the latter cell-type during normal loss must still receive consideration.

The majority of the investigators who have worked on this problem have concluded that undifferentiated cells lie in the intestinal glands where, by repeated mitoses, they can give rise to the four cell-types mentioned above. But it has been suggested by a number of investigators that the mucous cells in particular are replaced by wandering mesenchymal cells which undergo differentiation to become epithelial elements. More recently, it was felt by another group that wandering lymphocytes enter the intestinal epithelium and, by differentiating mitoses, replace cells of this layer.

The present investigation is a continuation of an earlier study conducted by the author and is undertaken in an attempt to clarify the findings of earlier workers on the subject of cell origins within the intestinal epithelium.

Within the intestinal submucosa of the urodele there are unique aggregations of cells which have been analogized as well as homologized with the crypts of Lieberkühn of the higher vertebrates. They have been assigned the functions of epithelial replacement or secretion or a combination of the two. Since these structures represent what may be

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considered primitive centers of intestinal epithelial cell differentiation, the salamander was chosen as the main experimental animal in the hope that findings would apply as well to the higher vertebrate.

In addition to the Wistar Institute rat, 382 salamanders were utilized in this study. The salamanders included seven species of North American *urodeles*, one European, and one Japanese.

In order to provide further proof of the analogous or homologous relationship of the cell-nests of the urodele and the intestinal crypts of higher forms and to observe the process of mucous cell differentiation, nitrogen mustard hydrochloride was administered intraperitoneally to 252 specimens of *Triturus viridescens*. Nitrogen mustard acts as an antimitotic and antimigratory agent, but differentiation is not inhibited. Therefore, if it could be proved that cells from the cell-nest of the urodele provide replacement cells to the intestinal epithelium, further differentiation of these cells into other cell-types, the goblet cell, for example, could be observed due to the inhibition of migration from the nests by the action of the drug.

Twenty-four specimens of *Triturus viridescens* were given intraperitoneal injections of colchicine in order to inhibit mitotic activity within the intestine. Recent work has indicated that cells formed within the intestinal crypts as well as cells formed within the cell-nest are "pushed" from these structures by the pressure exerted from below by continued mitoses. Therefore, after the administration of colchicine, if the above were correct, one would expect to find examples of interrupted mitoses within the epithelium after administration of this drug.

Serving a threefold purpose, 22 Wistar rats were utilized for general study of the intestine, for investigation of cellular loss from the villi as indicated recently by a number of workers, and for confirmation of the results of earlier studies by the writer involving the use of pilocarpine.

In order to investigate the presence of binucleated intestinal epithelial cells as noted in an earlier study, a comparatively new method of cell separation was attempted. This involved the use of hyaluronidase and its action upon the "cement substance" between the cells.

In addition to the routine histological stains, a method of differentially staining the ordinary epithelial cell nucleus and the goblet cell nucleus within the intestine is suggested. Further, in order to explore the possible relation between the goblet cell and the enterochromaffine cell, Popoff's various silver techniques were employed.

Except for the difference in fold shape, cell size, and cell population, the histological and cytological structures of the urodele intestine are similar. Unlike the intestinal crypts of higher vertebrates, the cell nests of these animals are not of uniform structure. It was found that these cell aggregations could be classified into five types: spherical or round,

elongate lying parallel to the epithelium, elongate lying perpendicular to the epithelium, pavement-like, and diffuse.

The cells composing the cell-nest are more basophilic than the epithelial cells lining the intestine and their nuclei are irregular in shape, more basophilic toward the bottom of the nest, and the overall appearance of the aggregates is one of a syncytium. Also present within the cell-nest are mucous cells and cells which appear to have a mesodermal origin, generally having the structure of lymphoid elements.

The cell-nest is not found in a particular location within the submucosa. It may or may not be attached to the mucosal layer. Generally, these aggregations are seen at the bases of the folds, but they may be seen deep within the submucosa with no apparent connection to the mucosa or within the fold core as far out as the apex on the intestinal fold. In those intestines expanded forcibly by saline injection into the lumen, the nests are found to lie in a bead-like fashion beneath the epithelial layer.

A unique feature of the cells composing the cell-nest is their apparent ability to migrate through the submucosa and enter the epithelial layer. Single cells or groups of cells can be observed entering the epithelium, either forcing their way between the epithelial elements or entering an epithelial cell and forming what is considered to be a binucleate cell.

In those animals placed upon a starvation regimen, there is a uniform decrease in cellular size, a decrease in the size of the cell-nests, and an increase in the number of goblet cells. However, there is no evidence that the cell-nest is not a constant structure within the intestinal submucosa of the urodele.

The presence of mitotic activity within the cell-nest is erratic. Counts made of mitotic cells on cross-sections of the intestine of 30 normal specimens of *Triturus viridescens* indicate an average of 212 nest cells per cross-section. In the same material, there is approximately one (1.2) mitotic figure in each section. Thus, mitotic cells represent 0.57 per cent of the total cell-nest population. In specimens treated with colchicine, aberrant mitoses are not observed within the epithelium and only a few are present within the cell-nests. There is no evidence of an increase in the mitotic cell-resting cell ratio.

In normal specimens of *Triturus viridescens*, an average of six mucous cells are seen per 212 nest cells in counts of cross-sections of the intestine. The mucous cells within the cell-nests represent 2.8 per cent of the total population of the nest. However, in those animals which received nitrogen mustard, from an average of 270 nest cells per cross-section of intestine, 32 (31.6) are mucous cells or 12.5 per cent. This figure indicates an increase of 446.4 per cent in the mucous cells of these animals over control animals.

The administration of pilocarpine to the Wistar rat does not confirm

the earlier findings that an increase in mitoses occurs within the crypts of Lieberkühn.

Concluding that the cell-nest is a transient structure within the intestinal submucosa as compared with the rather static intestinal crypt, it would appear that the two structures do not have a similar embryological origin. As there is no evidence of endodermal evagination, another source of cells was sought. The possibility of undifferentiated endodermal elements lying beneath the epithelium has to be ruled out, as considerable mitotic activity would be required to form the large accumulations of cells observed and this activity is not consistent with the findings.

It is therefore suggested that an undifferentiated cell of mesodermal or mesenchymal origin would be a likely replacement cell for the following reasons: (1) mesodermal cells represent a readily available source because of their frequency within the intestinal stroma, which would be an important consideration due to the scarcity of mitoses; (2) cells of mesodermal origin are relatively undifferentiated and possess the ability to travel varied differentiation pathways; (3) these cells generally possess polymorphic nuclei that are quite basophilic; (4) the mesodermal cell has been termed a "wandering cell"; and (5) mesodermal cells can produce a mucous secretion. The evidence accumulated in this study would seem to lend support to the conception of epithelial replacement by cells of mesodermal or mesenchymal origin.

Present in great number within the intestinal stroma as well as within the cell-nests are cells which are termed free spheroidal reticular cells. In the urodele they are thought to be young lymphocytes or lymphoid hemoblasts. The presence of these cells in increased number in conditions which require a "mobilization" of the cell-nest in what appear to be various stages of differentiation into typical nidal cells suggests that these mesodermal elements are the progenitors of the cells composing the cell-nest.

Briefly summarizing the mechanism of epithelial replacement within the urodele it is suggested that the cell-nest is composed of undifferentiated mesenchymal cells, very likely lymphocytes, which migrate into the epithelial layer after maturation within the cell-nest. Migration is either between adjacent epithelial cells or into an epithelial cell where the migratory nucleus becomes the functional nucleus of the cell. Goblet cells are derived from columnar absorbing cells or result from early differentiation of the nest cell within the cell aggregates.

VITAMIN B₁₂ IN THE NUTRITION OF THE CHICK

by MATTIE RAE SPIVEY*

Vitamin B₁₂ is the center of intensive nutritional and biochemical research at the present time, since it is the most important recently discovered member of the vitamin B complex. The significance of many unidentified factors, now known to be identical with vitamin B₁₂, was recognized long ago. These include the extrinsic factor for the treatment of pernicious anemia, Factor X, the cow manure factor, zoopherin, and animal protein factor for improved animal nutrition, and the LLD factor necessary for growth of a bacterium. These factors were associated with animal products and were found to be either quite low or entirely absent from vegetable products. Vitamin B₁₂ is now known to be required by man, many animal species, and several microorganisms.

The role which vitamin B₁₂ plays in the living organism is not clear since its metabolic functions have not been completely elucidated. The vitamin has been implicated more or less directly in several rather diverse metabolic schemes. There is considerable evidence that vitamin B₁₂ is involved in protein metabolism. Studies on blood levels of various nitrogen-containing constituents suggest that vitamin B₁₂ may have a function in the metabolism of amino acids. A similar suggestion is found in the effect of vitamin B₁₂ in alleviating toxicity of certain amino acids. Vitamin B₁₂ has been shown to have a role in the synthesis and in the transfer of methyl groups in the body. The exact nature of this function is unknown, although there is some indication that vitamin B₁₂ may aid in the synthesis of methionine by maintaining homocysteine in the reduced state. Vitamin B₁₂ has been implicated in nucleic acid metabolism through demonstration of an effect upon the synthesis of thymidine. A very limited amount of data indicates that vitamin B₁₂ may be related to carbohydrate metabolism in some way. Vitamin B₁₂ has been linked with fat metabolism chiefly through its relation to lipotropic factors such as methionine and choline.

Interrelation of vitamin B₁₂ with other vitamins has been studied. Evidence has been presented to link the metabolism of vitamin B₁₂ with that of folic acid, pantothenic acid, and riboflavin. Presumably, folic acid and vitamin B₁₂ may be interrelated in some way in the metabolism of one carbon intermediates.

The production of a vitamin B₁₂ deficiency in experimental animals is important for several reasons. Clues as to the metabolic function of the vitamin may be obtained from gross and histological observations and biochemical studies of such a deficient animal. Secondly, an animal in

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various stages of vitamin B₁₂ deficiency is useful in studying the interrelationships of other nutrients with vitamin B₁₂. The effect of various compounds in replacing vitamin B₁₂ or in decreasing the requirement may be studied in a vitamin B₁₂ deficiency.

A number of animals have been utilized for the production of a vitamin B₁₂ deficiency. Certain complicating factors have been common to most of these studies. Vitamin B₁₂ is required in extremely small quantities. It not only is stored rather well in the animal, but it is transferred from the mother to the offspring, to an extent capable of satisfying the requirement of the young animal. Most of the studies with vitamin B₁₂, therefore, have been carried out with young from mothers depleted of their vitamin B₁₂ stores. The mothers are depleted of their vitamin B₁₂ stores by maintenance on rations composed of all-plant products which are deficient in the vitamin. The possibility exists, therefore, that these young may also be depleted of unidentified factors associated with animal products.

No metabolic antagonist of vitamin B₁₂ is known, so a deficiency of the vitamin must be produced by depleting the animal of vitamin B₁₂ by some means. Imbalances of the diet with regard to fat, protein, carbohydrate, and vitamins have proven useful in some instances in increasing the deficiency of vitamin B₁₂ in the animal. In addition, metabolic stresses, such as thyroxine, have been helpful in producing a deficiency under certain conditions.

The primary purpose of the present study was to develop diets capable of producing a marked vitamin B₁₂ deficiency in chicks hatched from eggs laid by hens fed a standard breeder diet. The use of synthetic diets was considered important since so little work has been reported on the use of synthetic diets in the study of vitamin B₁₂ deficiency, particularly in non-depleted chicks. An integral part of this general purpose was the study of factors influencing the severity of the deficiency. Through such a basic approach it was hoped that clues to the metabolic function and interrelationship of vitamin B₁₂ to other nutrients would be obtained. The chick is particularly well-suited to this type of study because its growth is quite sensitive to dietary deficiencies. Also, a deficiency of most of the B vitamins can be obtained in the chick simply by omission of the vitamin from the diet, whereas, this is not usually possible with other species.

Certain criteria were considered important in evaluating the diets for the purposes of these studies. The most important consideration was that a diet should produce a definite vitamin B₁₂ deficiency state, which could be prevented by including vitamin B₁₂ in the diet. It was considered desirable that the response of the chick to the experimental diet containing vitamin B₁₂ should be equivalent to that of chicks fed a standard diet.

Day-old New Hampshire female chicks were used for these studies. In almost all series the chicks were fed the experimental diets for a

period of four weeks. The response of the chicks was evaluated on the basis of growth, feathering, feed efficiency, and general appearance. In many series, the chick livers were removed at the end of the experiment, pooled by group, and homogenized. Vitamin B₁₂ of the liver homogenates was assayed with *Lactobacillus leichmannii*; dry matter and fat were also determined on the liver.

Two basic types of diets have been used in these studies, i. e., synthetic and all-vegetable diets. The synthetic diet contained 20 per cent casein, 8 per cent gelatin, 0.3 per cent methionine, 4 per cent corn oil, 6 per cent salts, and 61.5 per cent cerelese (crude glucose). The vitamins known to be required by the chick were supplied in excess of the minimal requirement. The amino acid diets were similar to these synthetic diets except that the casein and gelatin were replaced by essential and non-essential amino acids in adequate amounts. The all-vegetable diets contained 35 per cent soybean oil meal, salts, corn, and usually only vitamin D₃, riboflavin, and vitamin B₁₂. The salt mixture usually used was made up of C. P. or U. S. P. grade salts; however, reagent grade salts and sulfur-free salts were also used. These basic diets were varied in many ways to suit the needs of a given experiment.

In general, the all-vegetable diets proved to be more useful than the synthetic diets for the production of a marked vitamin B₁₂ deficiency. This difference was well demonstrated in one series in which vitamin B₁₂ depleted chicks were used. In the absence of vitamin B₁₂, growth of chicks receiving the synthetic diet was far superior to that of chicks receiving an all-vegetable diet, so it appeared that something in the synthetic diet was sparing vitamin B₁₂ in some way. Substitution of arginine and glycine for gelatin had no effect. Although the casein was shown to contain some vitamin B₁₂, when assayed microbiologically, the quantities were too low to affect growth of the chicks. Methionine and possibly some of the other B vitamins had some sparing effect upon the vitamin B₁₂ requirement. The use of reagent grade salts and sucrose instead of cerelese appeared to aid in producing a vitamin B₁₂ deficiency with both the synthetic and corn-soybean meal diets. In some instances, distilled drinking water was superior to tap water in increasing the deficiency. It was found that some vitamin B₁₂ was synthesized in the drinking water, but the quantities were too small to have a significant effect. Also, this would have affected chicks receiving synthetic and all-vegetable diets alike. It seems likely that several factors may have been operative in promoting growth in the absence of vitamin B₁₂. Attempts to produce a vitamin B₁₂ deficiency with imbalanced synthetic diets were unsuccessful.

The amino acid diets were rather unsatisfactory for this study since sub-optimal growth was obtained with the complete diet and omission of vitamin B₁₂ had little effect upon growth.

Imbalances of the corn-soybean meal diets were very successful in increasing the vitamin B₁₂ deficiency. High levels of protein and amino acids were added to the diet at the expense of corn. Some of the materials used were casein, sodium proteinate, zein, glycine, and ketogenic amino acids. Also, addition of 16 per cent or 20 per cent Crisco or lard consistently resulted in a marked increase in the vitamin B₁₂ deficiency. Both high protein and high fat depressed growth even with adequate vitamin B₁₂, as compared to control groups receiving the basal diet. Substitution of 20 per cent cerelese or lactose for corn had little effect. Sucrose and cellophane did appear to increase the deficiency. The addition of 0.5 per cent nicotinamide also increased the difference in response between chicks with and without dietary vitamin B₁₂.

Since the above dietary imbalances were so successful in producing a vitamin B₁₂ deficiency, very little work was done to test the effect of metabolic stresses. Thyroxine and cortisone both enhanced the deficiency in one series with the corn-soybean meal diets.

The growth-stimulating effects of various compounds were determined in chicks fed corn-soybean meal diets that produced a severe deficiency of vitamin B₁₂. A sparing effect under these conditions was found with 0.3 per cent methionine, 50 mg. aureomycin, 100 mg CoSO₄·7H₂O, and 27 mg. folic acid/kg. of diet. Contrary to the findings of other workers, no sparing effect was observed with high levels of riboflavin and calcium pantothenate.

Existence of a relation between the metabolism of methionine and vitamin B₁₂ is well known. Omission of supplemental methionine (0.3 per cent) from the synthetic diet resulted in a definite growth depression. The omission of both vitamin B₁₂ and methionine had no further effect upon growth. It was found that feeding a very high level of vitamin B₁₂ partially overcame the growth depression due to the methionine omission.

The concentration of vitamin B₁₂ found in the chick livers was related to intake. Chicks that received a corn-soybean meal diet containing no vitamin B₁₂ had comparable concentrations of vitamin B₁₂ in the liver irrespective of growth. Some of the imbalanced diets, particularly those containing high levels of lactose, ketogenic amino acids, nicotinamide and cellophane, resulted in increased liver storage of vitamin B₁₂ in the positive controls receiving the vitamin in the diet. This effect could not be explained entirely on the basis of vitamin B₁₂ intake.

The fat and dry matter contents of the livers were little affected by vitamin B₁₂ deficiency. As was expected, the presence of ethionine in the diet resulted in the production of fatty livers.

Growth of the chick has been considered the most important and most sensitive index to vitamin B₁₂ activity. Chicks whose growth was markedly depressed due to a vitamin B₁₂ deficiency also exhibited poor feather-

ing, decreased feed efficiency, and an increased ratio of liver weight to body weight.

A severe vitamin B₁₂ deficiency has been produced in chicks hatched from eggs laid by hens receiving a standard breeder diet. All-vegetable diets, which were imbalanced in some nutrient, proved to be the most useful for these studies. The variety of imbalanced diets which have resulted in a deficiency should prove very valuable in future investigations of the metabolic role of vitamin B₁₂. Evidence has been presented that a sparing factor(s) for vitamin B₁₂ was present in the synthetic diet. It was found that a very high level of vitamin B₁₂ could partially replace dietary methionine. Storage of vitamin B₁₂ in the liver has been useful in evaluating the effect of various dietary constituents on vitamin B₁₂ metabolism.

SURVIVAL PROBABILITY

by DALTON HOUSTON WRIGHT*

L. B. C. Cunningham and W. R. B. Hynd in "Random Processes in Air Warfare", *Journal of the Royal Statistical Society Supplement*, Vol. 8 (1946), pp. 66-85, formulated the problem of finding the probability of at least one hit when a rapidly firing gun is used against a moving target. These authors derived a computing formula for the survival probability assuming the target has a circular outline. Their formula is unsatisfactory for a large number of shots.

In general, the problem is to obtain a criterion for evaluating the accuracy of rapidly firing guns used against moving targets. The most obvious criterion is the probability of at least one hit. Another criterion is the probability of at least r hits. In the present paper it is shown that correlation in aiming points has a favorable effect on the probability of at least r hits where $r > 2$ for certain values of the other parameters and correlation in aiming points has, in general, an adverse effect on the probability of at least one hit.

The computation of the survival probability for the case of a large number of rounds and a general autocorrelation function $\rho(t)$ is exceedingly difficult. However, several computing formulas for the survival probability for various values of the parameters are given. To facilitate the computing the actual autocorrelation values are replaced by their mean and the results are compared with those of the actual autocorrelation values.

A numerical analysis of the effect of variation of the parameters on the probability of at least one hit and the probability of at least two hits is presented. The basic assumptions underlying the theory developed by D. A. S. Fraser in "Generalized Hit Probabilities with a Gaussian Target", *Annals of Mathematical Statistics*, Vol. 22, II (June 1951), pp. 248-255, are investigated and tested statistically by using actual data and comparing the results with those obtained when the theoretical computing formula is used.

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DAVID GARRICK: PRODUCER

A STUDY OF GARRICK'S ALTERATIONS OF NON-SHAKESPEAREAN PLAYS

by FREDRICK LOUIS BERGMANN*

Within the last two decades serious re-examination of David Garrick has taken place. Studies have recently been made, or are being made, of Garrick the actor, Garrick the dramatist, Garrick the manager, Garrick the critic, Garrick the poet, Garrick the producer of Shakespeare. His correspondence is being newly edited, and the journals of his visits to the Continent have been published. These studies have prompted me to examine the non-Shakespearean plays which he himself readied for the stage. Fifteen plays are included in the study; their stage histories, the altered texts, the casting and acting, and contemporary critical reaction to the productions present detailed information on the eighteenth-century custom of reviving old plays. The plays he selected for alteration and the nature of his adaptations show his understanding of contemporary trends as well as his active role in the formation of public taste. My sources have been prompt and acting copies of Garrick's which have not hitherto been examined, printed texts and acting versions, stage histories and memoirs, letters and diaries, and complete Drury Lane and Covent Garden records for the Garrick period prepared by Dr. George Winchester Stone, Jr.

I

Analysis of the changes which Garrick made in the plays he revived at his theater, as well as details of production, gains meaning in the light of his duties as manager and the critical principles or patterns which he professed or followed in preparing the theatrical bill of fare at Drury Lane. As a joint-patentee of the theater Garrick was concerned not only with profits, but with choice of plays for production, discovery of new writing talent, aid to playwrights in the throes of composition, long hours of rehearsing his company, and discovery of new acting talent while attempting to bring out the best in his company of actors, in addition to preparing original pieces and alterations. Garrick spent a large proportion of his time discussing plays and corresponding about them. Original plays and alterations poured in to him, and his correspondence testifies to his conscientiousness in dealing with the manuscripts. One writer would be made unhappy by Garrick's criticisms and another would be grateful for his suggestions. But for every grateful Colman, More, Murphy, or Cumberland there was an irate Dr. Francklin, an angry Sir

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Joshua Reynolds (because his nephew's play was rejected), a threatening Francis Gentleman. Amid these pleasures and these woes Garrick found time to write a surprisingly large number of dramatic works, mostly afterpieces, many of which were highly successful. He wrote, in addition, a large number of prologues and epilogues. All these time-consuming activities, however, left the busy actor-manager enough time to search out and revise likely plays from the older drama for presentation at his theater "without fee or reward", as he himself said.

As a critic of the efforts of other playwrights Garrick was most insistent upon the need for plot or "fable". "*Action, Action, Action*", he told one writer, is the prime requisite of the drama. The fable must be tightly constructed, the characters strongly marked, the language dramatic, the catastrophe compelling. Tragedy must be a blend of the striking, the pathetic, and the terrible; the "calm admirable" has no place in it. Comedy must not be unnatural, improbable, or too farcical; it should have "laugh & pleasantry" and not be "like Niobe all tears". Thus Garrick protested against the sentimental comedies which were sermons, not plays. Although a shrewd manager and no crusader, one willing to capitalize on tears at the expense of laughter, Garrick carefully played up to that element in the public which appreciated laughing and manners comedy. *The Clandestine Marriage*, for example, is genuine comedy, and his afterpieces exploit the satirical vein. Of the fifteen alterations considered in this study, nine are satirical, humorous works and none is sentimental comedy. The reformation of the stage, Garrick once wrote, must begin with the public; and he worked mightily to mold public taste—the taste for Shakespeare, for example, and for laughing comedy. In the process he became a kind of guardian of public morals, ridding the old plays of coarseness and indecency, dropping such offending plays as Ravenscroft's *The London Cuckolds* from the Drury Lane repertoire, and admonishing contemporary writers when they overstepped the bounds of good taste. He seems to have taken literally William Whitehead's admonition,

A nation's taste depends on you,
Perhaps a nation's virtue too!

His friends praised his attempts to "encourage and promote the love of virtue and virtuous actions", and Garrick wrote confidently in 1774:

Dramatic Writers were, like Watchmen, meant
To knock down Vice; few answer the intent!

By this time he felt he knew his audience, what it wanted and what it should have, and he believed that through the years these two had become one and the same. He knew exactly what he was doing in making his alterations conform to the standards of good taste, for he had done much to form those standards.

II

Garrick's alterations, other than the plays of Shakespeare, include the following, arranged, insofar as can be determined, in order of alteration: *The Rehearsal*, by the Duke of Buckingham and others; *The Alchemist*, by Jonson; *The Provok'd Wife*, by Vanbrugh; *The Roman Father*, by William Whitehead; *Every Man in His Humour*, by Jonson; *The Chances*, by Fletcher as altered by the Duke of Buckingham; *Isabella*, made from Southerne's *The Fatal Marriage*; *The Gamesters*, altered from Shirley's *The Gamester*; *Mahomet the Impostor*, altered from James Miller and John Hoadley's adaptation of Voltaire's play; *Zara*, altered from Aaron Hill's adaptation of Voltaire; *The Country Girl*, adapted from Wycherley's *The Country Wife*; *King Arthur*, by Dryden; *Alfred*, altered from David Mallet's revision of the Thomson-Mallet masque of the same name; and *Albumazar*, by Thomas Tomkis. Another play, Fletcher's *Rule a Wife and Have a Wife*, the alterer of which is in question, is also included because Garrick, if he did not make it, at least seems to have played a part in the modernization. Each of these plays is considered from the point of view of the stage history and the Garrick text, the omissions, additions, emendations, and other changes being noted. For most of those in which Garrick acted, a third section deals with his methods of portrayal and critical comment on his efforts.

In producing *The Rehearsal* Garrick followed the lead of his predecessors in adding contemporary references and went beyond them in caricaturing well-known actors of the day. His acting copy and later printed editions indicate that his first interest was to eliminate references which would no longer be meaningful for the audience. He improved the dramatic action, reduced the amount of singing and dancing, and substituted for the singing-battle between the General and the Lieutenant-General "a Grand Theatrical Battle" by Bayes' "new-rai'd Troops", a farcical battle scene which modernized Buckingham's now meaningless satire on Davenant's *Siege of Rhodes*. Garrick's satiric mimicry of the popular actors of the day gave new life to the old play; in diverting the satire from Dryden and his contemporaries to a general satire on playwrights and specific satire on mid-century actors he revitalized it but earned the enmity of the players.

Garrick gave his distinctive quality to the role of Abel Drugger in the spring of 1743, whereupon *The Alchemist* became the exclusive property of Drury Lane, no other theater daring to attempt it. It was offered ninety-four times before Garrick last played Drugger in the 1775-76 season. In producing it Garrick's chief problems were to cut down the playing time, to eliminate references to persons and events contemporary with Jonson, and to scrub up or omit diction no longer considered fit for the nice ear of theatergoers; and all this without spoiling the superb unity and increasing suspense of the plot. His achievement is that he

was able to reduce the length by more than a third, and that by trimming, not butchering. Jonson's four lines of increasing suspense are maintained, but a great deal of the alchemy talk and the satire on the Anabaptists is eliminated. The few additions to the play serve in the main to dress up the part of the tobacco-man, incorporating in it lines which allowed Garrick to make fuller use of his famous stage mannerisms. As a result he was charged with robbing the role of Kastrill to enrich his own, particularly in the addition of a "boxing match" in which Druggier assists Kastrill in driving Surly from the house.

Garrick's prompt copy of *The Provok'd Wife* is invaluable in showing the changes he made in his production of Vanbrugh's play. Later alterations by Garrick are indicated in printed acting versions. Here again Garrick cut the play down to a more manageable size and kept an eye out for anything which might offend the ears of his audience. The matter of dramatic decorum enters in the improving of some characters and the worsening of others. And the matter of taste enters into the careful omission of passages which reflect upon the church and its ministers. The role of Sir John Brute was one of Garrick's favorites; he played the part an even hundred times. An acting copy of *The Roman Father* also has proved valuable in determining the producer's method of preparing a new play for the stage. Garrick was able to convince Whitehead of the necessity for making changes in the text, and after the writing was completed the producer pruned the play of wordiness and rhetorical flourish, increased the pace, and shortened the climax in order not to tear the passion too much to tatters.

The alteration of *Every Man in His Humour* was one of Garrick's most carefully done. This care paid dividends in the fact that hostile criticism has never been raised against it. He altered it only sufficiently to adapt it to eighteenth-century theatrical practices, to eliminate obscure allusions and some indecencies, and to give the diffuse comedy a center of attention by heightening Kiteley's jealousy. Cob's part he cut extensively; those of Matthew and Bobadil less. The most extensive revision comes in IV, viii, where Garrick expands and also rearranges the lines, heightening the jealousy theme.

Garrick based his version of *The Chances* on the alteration of the Duke of Buckingham, who had improved the last part of Fletcher's play. While appreciating the worth of the Duke's revision, Garrick yet took pains, in his two different alterations of the comedy, to restore Fletcher's lines whenever he felt he could do so. In making both alterations he compared the original line for line with Buckingham's alteration. The important characteristic of this alteration is the light it throws on Garrick as a lover of texts and his pains in giving the public the best possible version of a play. Commentators on Garrick's alteration have been incorrect in assuming that his only attempt was to render the play more decent, as both the prompt copy and the later printed versions testify.

Besides restoring the original text, his alteration heightens comic situations, improves the pace, adds action, avoids shocking the sensibilities of his audience, and strengthens the element of decorum in the characters of Don John and the First Constantia.

The transfusion which Garrick gave to *The Fatal Marriage* so rejuvenated the play that *Isabella's* life span was tripled before it was last performed in 1843. Garrick's major change was to eliminate entirely Southerne's comic sub-plot "not only as indelicate, but as immoral". The result is a full-blown weeping tragedy, without mixture of genres. He also added a new reason for the villainy of Carlos, who occasions the tragedy, in order to strengthen probability; and he heightened the pathos, particularly in Biron's part. Garrick's task in altering Shirley's *The Gamester* likewise included meeting the problem of confused genres; in this instance Garrick eliminated the romantic sub-plot from a comedy of manners. In addition, he scrubbed up the play to make it acceptable in his day, unified it, and gave his public a version much nearer to Shirley's original than theater audiences had known since Charles Johnson's *The Wife's Relief* had superseded the old comedy in 1711. Garrick also integrated the characters of the Barnacles into the main plot. For low comedy he substituted witty dialogue or what, in that day, passed for wit.

Two plays originally by Voltaire also came under Garrick's hand as alterer. The first, *Mahomet*, he altered only slightly, refurbishing Miller and Hoadly's version by shortening the play, reducing rhetorical verbiage, speeding action, cutting down on bombast, and giving less emphasis to the incest theme which plays an important part in the original. The other, *Zara*, is here first established as Garrick's alteration, as substantiated by a prompt copy in his hand. Here again Garrick returned to the original text, restoring Voltaire's reading whenever Aaron Hill had perverted or overstated it. Otherwise his aims were to avoid exceeding the saturation point for declamation and putting too much strain on an actor's histrionic ability. The neo-classical fetish of decorum likewise enters into the alteration.

Garrick's revision of *The Country Wife* is so extensive as to make it almost a new play. To make Wycherley's "unfit" comedy acceptable Garrick changed the wife to a spinster, removed the entire situation of Horner and his associates, and eliminated the episode in which a layman dresses as a parson in order to perform a bogus marriage. With these changes disappeared most of the immorality with which Wycherley's play is supercharged. From one of Wycherley's own sources, *L'Ecole des Maris*, Garrick borrowed the device of having the man tricked not a husband but a would-be one; his play, rather than making sport of a husband's new-cut horns, becomes a romantic comedy in which two young lovers are united at the expense of a jealous old man.

Garrick also altered two musical pieces. Dryden's *King Arthur* he produced as an elaborate masque designed primarily as spectacle. He spared no expense in stage sets and tricks of production, and he added some new songs. His alteration of *Alfred* is more interesting in that here again Garrick returned to the original, restoring Thomson's songs, including "Rule, Britannia!" in place of the vapid verse which Mallet had substituted for them. New music and lavish production were other characteristics of the revival.

In reviving *Albumazar* in 1747 Garrick capitalized on the interest which *The Alchemist* held for theater-goers. His alteration, however, is a late one, made for performances in 1773. Garrick was searching for a non-sentimental play which would bring to his house some of the crowds who had enthusiastically applauded *She Stoops to Conquer* earlier in the year. With this objective in mind Garrick cut the length of the original, accelerated the action, pared away what was unnecessary to the development of the plot, smoothed out the conclusion, and centered the attention of the audience not so much on astrological fakery as on the comic characterization of the clown Trincalo, Garrick's answer to Tony Lumpkin.

The last alteration in the study, *Rule a Wife and Have a Wife*, may not have been primarily Garrick's, although it is likely that he played an important role in it. The alteration itself follows Garrick's usual pattern: the omission of coarseness of language and indecencies, attention to the matter of decorum, cutting the playing time, increasing probability, and avoiding low-comedy elements. Interesting among the omissions and emendations are those designed to trim down the size of Fletcher's hero to fit Garrick's physique.

Garrick's principles and practices of alteration show in a general way what was asked of the stage during the second half of the century. The major characteristics of the alterations are these: restraint in language in the interest of decency and good taste, removal of archaisms, revision for the sake of immediate clarity, reduction of playing time, adherence to the unity of action, attention to the pseudo-classic ideals of decorum, avoiding low comedy for its own sake, attention to naturalness of expression and of acting, choice of suitable actors for the roles, and attention to details of staging. These alterations reveal Garrick's genuine interest in manners comedy and, more important, his effort to return to the original texts when dealing with second-hand versions of older plays. This characteristic establishes Garrick as a thoughtful and even a scholarly alterer and adds stature to the man as a producer. His success resulted from a combination of good texts, good acting, and good production; and his productions helped mightily in shaping the course of English drama through the second half of the eighteenth century and well into the next.

A PRESENTATION AND ANALYSIS OF THE WORKS OF
BENJAMIN VALLOTTON, A FRENCH-SWISS AUTHOR
FROM THE CANTON DE VAUD

by LLOYD WILLIAM BUHRMAN*

The purpose of this study is to introduce Benjamin Vallotton (born 1877), a contemporary French-Swiss author whose works have heretofore not received full-length treatment. In 1922 Vallotton was elected to the Belgian Academy of the French Language and Literature, and three of his novels, *La Famille Profit* (1909), *Les Racines* (1915), and *Ceux de Barivier* (1920) were crowned by the French Academy. In addition to some thirty-four novels, his literary output consists of many articles, tracts, and journals on a variety of subjects. Vallotton is primarily a novelist who not only writes convincingly about his native Canton de Vaud, but also shows great sympathy and understanding for the French and Alsatian peoples who have borne the brunt of military invasion on so many occasions. His works are not limited to a portrayal of the Vaudois scene, but take in much of the turbulent history of the twentieth century as seen through the eyes of a neutral Swiss.

Born on January 10, 1877 in the Alpine village of Gryon, Vaud, Vallotton spent his childhood in Lausanne where he learned to love this city and the beautiful region around Lake Léman. His father, Paul Vallotton was Swiss, and had been a Protestant minister in France, a fact which later influenced the intellectual development of his son, especially insofar as the ethical moral concepts of his upbringing were concerned. Benjamin's mother, Julie Vallotton-Baridon, was born of Huguenot stock in the region of Freissinières in the French Dauphiné. This combined Franco-Vaudois union is significant, since it accounts for much of the moral and religious emphasis in Vallotton's works as well as for his sympathy toward France and the Allies during the First and Second World Wars.

Vallotton completed his education at the Collège and Gymnase Classique in Lausanne, and continued his advanced studies in the humanities at the University of Lausanne and later in Paris. From 1899 to 1911, he was a teacher of French in Alsace which was then under German control. Here he observed most thoroughly the problems of the Alsatian people who were torn between their loyalty to the French, and their obedience to the German government after the War of 1870. In 1910, after a three-month visit to the Near Eastern countries, he returned to Lausanne where he taught French literature at the Gymnase Classique until 1921. He then went back to Alsace and taught in Strasbourg until 1935. Throughout both World Wars he was active as a journalist, and from

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1942 to 1945 he spent part of his time at Sanary near Toulon, France, and at Freissinières, the home of his maternal ancestors, where he wrote several of his recent works. Since the Second World War, he has associated himself with the Moral Rearmament Movement, also known as the Oxford Group, and has continued to write novels and biographies on moral themes as well as humorous satires on Vaudois life.

Vallotton began his career with sketches of cantonal life while still a student of Belles-Lettres in Lausanne. As early as 1904 he made a successful début in French-Swiss letters with *Portes entr'ouvertes, propos du Commissaire Potterat*, describing the antics of a jovial type vaudois named David Potterat. Local critics immediately proclaimed Vallotton a popular writer whose inspiration sprang from the very heart of his people, noting that Potterat embodied many of the characteristics of the Canton de Vaud.

In the years preceding the First World War Vallotton continued to depict the manners and morals of his countrymen, and he especially enjoyed satirizing the Lausannois with a quaint combination of humor and moralizing that seemed to please the literary tastes of his readers. He expanded *Portes entr'ouvertes* into a trilogy, adding *Monsieur Potterat se marie* (1906) and *Ce qu'en pense Potterat* (1915) which show a striking use of realistic detail and a profound understanding of human psychology. After this, he turned to more serious satire, and in *La Famille Profit* (1909) pointed out social injustice, describing the family problems of Gustave Profit, an impoverished *instituteur*. He then published his first long trilogy, *La Moisson est grande* (1910-1912) which shows the influence of his Calvinist background and earlier French-Swiss didactic literature. Here he came forth as a Protestant moralist with a youthful urge to condemn the very foibles he gaily satirized before.

Soon these critical attitudes of reform and his inherent sympathy for France combined to change Vallotton from a purely regional writer to an ardent supporter of the Allied cause in World War I. In 1915, he had already become alarmed over the destruction and human sacrifice caused by the fighting, and especially over the violation of Belgian neutrality. The fact that the Swiss Army had been mobilized, and the doctrine of neutrality invoked without official condemnation of the war-like acts of Germany, only added to his anxiety. In *Ce qu'en pense Potterat* he protested vigorously against the German invasion of France and Belgium, and called for an expression of sympathy from his government. Again, in *Les Racines* (1915) he tried to encourage Franco-Swiss friendship by sending his hero, Justin Frochon, off to war in the service of France.

In many ways the war marks a turning point in Vallotton's career,

for it led him to make eloquent pleas on behalf of the Allies which he published in *Et la Suisse?* (1919) and other propaganda pieces. His war-time activities took him to the battlefields of France where he was appalled by the destruction, and where he interviewed soldiers and refugees, ever mindful that those in French-Switzerland must be informed of the tragic events raging about their frontiers. All this he published in stirring accounts such as *A travers la France en guerre* (1915) and *Au pays de la mort* (1917). Moreover, he was especially preoccupied with the welfare of Alsace. In *On changerait plutôt le cœur de place* (1917) and later in his trilogy *Quel est ton pays?* (1929-1931), he took up the Alsatian problem at great length, showing the human side of the eternal political conflict over this province where he had taught for so many years.

Between the First and Second World Wars, Vallotton's writing was rather diversified and irregular. Nevertheless, it was during this period that he published *Ceux de Baravier* (1920), undoubtedly his best war novel, describing the hardships and loyalty of the French Savoyards. Moreover, he took particular interest in the blind, and in *A tâtons* (1921) wrote a very realistic account of the rehabilitation of blind veterans in France. He then turned to biography and family history, and with *Sur le roc* (1923) he revived the memory of his maternal ancestors at Freissinières. With the exception of *Patience!* (1922), telling of the unfortunate fate of a Swiss named Albert Froidevaux in the French Foreign Legion, the remainder of his works are purely of Vaudois inspiration. In 1922 he satirized the newly rich in *Achille & Cie.*, and later added *Pendant la fête* (1933), *Ceux du 13* (1934), and *Te rappelles-tu?* (1934) to his list of humorous sketches or *vaudoiseries*. Written in the popular vein these sketches show that, in spite of the war, he had lost none of the native humor that characterized his first Vaudois novels. Prior to the Second World War, he concluded a relatively calm interlude with two biographical novels, *Enfances* (1937) and *Au bord de la vie* (1939), which go back as much to his family history as they revert to his early Vaudois novels. Among other things, they are Vallotton's recollections of the past and recall a happy youth spent in Lausanne.

The Second World War marks another active period in Vallotton's career, and he again took up his pen on behalf of Alsace and France. This time his special contribution was the novelized journal, presenting in episodic fashion a panorama of the war years in France from the onslaught of the Nazi invasion to Allied victory in 1945. In chronological sequence, he showed once more the Alsatian's view of the war in *Feuilles dans le vent* (1941) and in *L'Alsace vous parle* (1946). He also gave an accurate and striking picture of life in Southern France during the German occupation in *Fascistes et Nazis en Provence* (1945).

At the same time, he showed the repercussions of the war in Switzerland with *Potterat revient* (1941), and in *La Foudre sur la maison* (1943) he took a firm stand against totalitarianism of all kinds, and defended democratic ideals. These works, combined with his novels and other writings of the First World War, make up a rather impressive body of war literature covering more than half a century of history.

After the Second World War, Vallotton showed renewed interest in biography. Most of those he wrote are intended to be exemplary, and to tell of men whose lives might serve as lessons of courage to a world in search of moral and spiritual values. Of these, *Victoire! Félix Neff vous parle* (1949) and *Cœur à cœur* (1950) are outstanding. His post-war novels also reflect a concern for morality and religion, and in *L'Homme de la grotte* (1949), his second Huguenot novel, he took up the problem of a conscientious objector whose religious beliefs were in direct conflict with modern society. Recently, however, he has gone back to the Vaudois scene, and in *Cachemaille retraité* (1951) and *Sous le même toit* (1952) he still depicts the manners and morals of his countrymen, this time in retrospect and dealing with his own contemporaries. He continues to show the keen observation and witty satire that characterized his earliest writings.

The foregoing does not include Vallotton's short stories of which he wrote some thirty-five between 1906 and 1919. Most of these appeared in French-Swiss literary reviews of the period, and closely parallel his early Vaudois novels. He published two collections of stories in *Torgnolux* (1908) and *Les Loups* (1918), the latter being primarily war-inspired and of the propaganda nature. In general, these *nouvelles* show excellent talent for telling clever stories of family life, especially about children and elderly people, and it is unfortunate that after the First World War he seems to have lost interest in this particular genre.

Vallotton's works fall broadly into two categories: those of Vaudois or Huguenot origin, and those inspired by the First and Second World Wars. He proceeded from the position of a regional humorist and satirist to that of a moralist and propagandist. Moreover, it may be said that he is essentially a moralist in treating the Vaudois scene and a propagandist in his war literature, although obviously these traits become inseparable. Most of his propaganda deals with the Franco-German problem. In his Alsatian trilogy, *Quel est ton pays?*, which is really a historical treatise in fiction, his attitude toward the French is one of great understanding and affection. Here his political criticism is intended to be constructive. He did not hesitate to point out the weaknesses he found in post-war administrations of France, especially as far as Alsace was concerned. On the other hand, his denunciation of German militarism and educational methods was final, for he be-

lieved that a blind worship of discipline and order, to the extent of sacrificing the individual, could only lead to disaster. Yet, even in his criticism of Germany, he was careful not to censure the German people as a whole for the folly of their leaders.

Not all Vallotton's propaganda concerns the war. His biographical works and sundry articles bring to light a number of other pressing problems of the day. His lectures on world affairs such as "Pessimisme ou optimisme" (1925), were often timely and showed insight into the changing political and social scene. In several instances, his appraisal of the trend of events in Europe and his analysis of the social unrest in Asia before World War II seem almost clairvoyant when viewed in retrospect. In some of his novels and articles his remarks on speed and science, however repetitive, show that he did not deny a place to material progress in the world today. He felt that we must live with our times, but that society in general was neglecting its spiritual and humane values in its quest for material advancement. It should not be forgotten that Vallotton was a humanist as well as a moralist.

As a moralist his role is somewhat paradoxical, for more than once he seemed annoyed with conventional morality as such. Apparently he did not wish to be considered a moralist although this is what he is basically. In his early works his ideas on morality were not altogether clear. He seemed to hold to a strict puritanical code of his own that did not allow much tolerance for the moral views of others. In *La Moisson est grande*, for example, he condemned the upper classes for their moral code or lack of it. In *Les Racines* he criticized the artists and aesthetes of his generation as morally deficient, and as a result clashed with local critics who believed in art for art's sake. But despite such moral emphasis, he could describe with complete candor the doings of soldiers, veterans, and types from all walks of life in their own coarse and vulgar language. This is especially true of *A tâtons*, and of some of his novelized war journals. The effect, of course, is excellent portrayal of things as they are. In his recent works his ideas on morality appear more tolerant, and no doubt both World Wars were responsible for the change. But it is also true that early in his career he expressed great admiration for the "gros rire" of Rabelais, the common sense of Montaigne, and the "rude sincerity" of Calvin, and from them he derived much of his frankness on moral questions.

Perhaps Vallotton might be called a moral-realist, for the term describes his place in French-Swiss letters. Although very early he asserted his independence of prevailing literary movements in a lecture, *Littérature et démocratie* (1906), he continues the tradition of Vaudois moralists into the twentieth century. He modifies this tradition, however, by introducing ideas of social reform and by pointing out the problems of the peasants and the lower middle-classes. It is with them,

the "petites gens", that his sympathies lie. But for all his championing of the lower classes and his satire of the wealthy, his treatment of social inequality suggests moral rather than social or economic reform. He favored a sort of proletarian literature steeped in Christian ideals and morality. Thus, in some ways he represents a reaction to the *fin de siècle* literature of France, including the Naturalist and Symbolist schools. There are times in Vallotton's war novels when the influence of Zola is strongly felt, particularly in descriptions of troop movements and refugees in flight. Yet he differed from Zola in his persistent moral emphasis. He believed that literatures should not merely amuse the élite, but that it should have both a moral and social purpose. Above all, he felt it was his duty to educate the public morally and spiritually.

Several literary critics have commented on Vallotton's works in recent years. French criticism has been largely general and superficial, mentioning for the most part his war novels and little else. Henri Clouard, for example, calls him a humorist and compares him with Louis Dumur, a Genevan known in France for his novels on the First World War and for his appeals favoring the Allies. René Lalou, in his two volume history of contemporary French literature, seems quite nationalistic in his judgments, taking note of Vallotton's novels dealing with France and the First World War. On the other hand, the Italian critic, Mario Ferraris, in his study, *Il Romanzo contemporaneo della Svizzera francese*, points out Vallotton's qualities as a popular writer whose novels are usually based on social problems. Moreover, he is impressed by Vallotton's profound sympathy for human suffering. Most of the criticism from French-Switzerland noted very early the differences between Vallotton and C.-F. Ramuz, although at first both writers were often mentioned as promising Vaudois novelists imbued with a love of their native soil. Later, however, it became clear that their ways of showing such affection were poles apart. Ramuz will remain the artist, and perhaps the foremost prose-painter of the Lake Léman region in French-Swiss letters. Vallotton, although never the artist, is rather a popular author whose works reflect the vernacular, and are therefore closer to the people.

Charly Clerc is one of several Swiss critics to point out Vallotton's spirit of *bonhomie* and good-will, and among other things, Clerc commends him for the "sagesse innée de l'honnêteté naturelle d'un petit peuple". René de Weck considers Vallotton a humorist and moralist as well as an excellent observer of the Vaudois scene. De Weck was also one of the first to call attention to his Alsatian trilogy. *Quel est ton pays?* Pierre Kohler, perhaps the most informed and balanced in his criticism, calls Vallotton a born narrator whose approach to life has been neither intellectual nor analytical. Kohler would not only give

Vallotton an exceptional place in French-Swiss letters, but also points out that, as a novelist, he is not limited to humorous portrayals of the "petits bourgeois" of Lausanne.

Primarily a Vaudois humorist and moralist, Vallotton is also a propagandist and a humanitarian whose universal appeal lies in his great sympathy for ordinary folk. He is a representative writer of the Canton de Vaud, and undoubtedly a spokesman for his people. He reflects the well-known Vaudois spirit of *bonhomie*, if not the much vaunted *esprit bourguignon* of the region. Moreover, as a writer he shows much of the serious and austere Protestant morality which is, even today, a part of cantonal life. He maintains the solid, Vaudois tradition of criticism and reserve that distinguishes this canton from the neighboring Catholic canton of Fribourg or the more volatile Geneva. Above all, he has proved to be a master observer of the Vaudois scene, and has recorded the manners and thoughts of his countrymen through more than half a century of war and peace. He has sought justice not only for Alsace, but for all other victims of modern warfare. His approach to life has always been human and direct, and his voice has reached well beyond the limits of his canton. Perhaps the proof of this lies in the appeal his works have among his readers from Belgium to the sunny regions of Provence. Indeed, whether in the small towns of the Canton de Vaud, or in the larger cities of Nîmes or Lyons, one can find his novels prominently displayed along with those of well-known lights of modern French literature. To be sure, his greatest popularity remains with the people of both France and Switzerland where he will be remembered for his sincere expression of that innate humanitarian spirit that characterizes the Swiss themselves.

A PHARMACOLOGIC STUDY OF CHOLINERGIC AND ADRENERGIC INFLUENCES ON THE RESPIRATORY CENTER OF THE CAT

by WILLIAM AARON KRIVOV*

DFP (di-isopropyl fluorophosphate) is an organic insecticide which owes its pharmacologic activity to its ability to combine irreversibly with cholinesterase. Because of the extreme toxicity of this compound it was at one time valued as a potential chemical warfare agent. In fact, this compound is strikingly similar to the so-called nerve gases whose pharmacologic activity arises from their ability to inactivate cholinesterase. This thesis is a part of the broader investigation of the toxicology of DFP and related anticholinesterases, with particular reference to their actions on the respiratory center. It has been known for some time that DFP causes death by respiratory failure, but this has been presumed to be an action primarily at the neuro-muscular junctions of muscles associated with respiratory activity.

The problem concerning the relationship between DFP toxicity and its actions on the respiratory center is essentially an investigation of the mechanism by which a nerve impulse in a pre-synaptic nerve fiber is able to evoke a response in the post-synaptic effector. In other words, the question is one of determining the nature of the physiologic continuity which exists across synapses as opposed to the lack of anatomical continuity. Therefore the present problem becomes one of the peculiarities of those synapses which constitute the respiratory center.

There are three main theories concerning the mechanism of synaptic transmission. The concept which best seems to fit the experimental observations is that transmission is dependent upon the release of one of at least two neurohumors, i.e., acetylcholine and epinephrine. These humors are released from the pre-synaptic nerve fiber which is in close approximation to the post-synaptic effector. Upon the release of either of these two humors there is a post-synaptic response, and therefore transmission across the synapse. Those synapses which are thought to be dependent upon acetylcholine, or an acetylcholine-like compound, for synaptic transmission are called cholinergic, those dependent upon epinephrine, or an epinephrine-like compound, are called adrenergic.

Because of the lack of specific tests for the identification of acetylcholine as it is released, five criteria have been advanced for the identification of an exogenous compound as the neurohumor associated with cholinergic transmission. These are: (1) that the response to the com-

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pound be increased by the administration of physostigmine; (2) that the presence of blood or tissue extract decrease the activity of the substance; (3) that the compound be rapidly destroyed by boiling in acid or alkali; (4) that the compound act on various biological indicators with particular specificity; (5) that atropine, curare, and nicotine block the actions of these compounds. Acetylcholine fits these criteria at all synapses which have been so studied.

The fact that acetylcholine is released at synapses was first demonstrated by Loewi on the heart in 1921. Not all synapses are as accessible as the heart, however. In those instances where the synapse under consideration is relatively inaccessible and the acetylcholine release cannot be determined, other techniques must be used. Prominent among these other techniques is the study of drug action. Thus, we know that acetylcholine in low doses enhances synaptic transmission at known cholinergic synapses, while in higher doses synaptic block occurs presumably because the acetylcholine maintains the post-synaptic effector in a depolarized state. The same has been found to be true for DFP. The fact that DFP acts in a manner similar to acetylcholine is understandable. DFP, acting in a qualitatively identical manner to physostigmine, inactivates the cholinesterase which is responsible for the hydrolysis of the endogenously produced acetylcholine. In this manner acetylcholine is permitted to accumulate and evoke a post-synaptic response which is prolonged. The consequences of the administration of DFP, then, are identical with the administration of acetylcholine.

When epinephrine is applied to a synapse, transmission is inhibited. Amphetamine, which is able to prevent the destruction of epinephrine, also inhibits synaptic transmission.

By applying these compounds to central synapses the same results are obtained, i.e., in low doses acetylcholine and DFP enhance synaptic transmission, whereas in high doses these compounds block synaptic transmission. Curare blocks synaptic transmission. Epinephrine and amphetamine inhibit synaptic transmission.

In order to have an efficiently functioning organism it seems reasonable to suggest that synaptic transmission would be dependent upon cholinergic and adrenergic mechanisms at all synapses. Therefore, since cholinergic and adrenergic mechanisms appear in all synapses which have been so studied, it was reasonable to suggest that DFP has a central component in its toxicity which paralyzes the central nervous control of respiratory activity.

Because DFP does not have a single site of action, but actually is known to cause respiratory embarrassment by actions on the bronchi, the diaphragm, and the intercostal musculature, the standard techniques used to evaluate the actions of drugs on the respiratory center are of no value in this instance. It was necessary to effectively distinguish

the actions at the neuro-muscular junction from the actions in the central nervous system. Therefore, in order to evaluate the actions of DFP directly on the respiratory center of the cat, the activity of the respiratory center was recorded from the respiratory impulses conducted down the phrenic nerve to the diaphragm in response to the discharge of the respiratory center.

Because the activity of the respiratory center can be inhibited either directly, or by the stimulation of chemo or pressor receptors located elsewhere in the body, in some experiments the influence of the chemo and pressor receptors was removed by the section of the vagus and glossopharyngeal nerves at the level of the *foramen jugulare*.

Tracheal air movement was measured simultaneously with the phrenic respiratory potentials by means of a modified headphone transducer connected to the side arm of the tracheal cannula. In addition, blood pressure was measured from the femoral artery using a mercury manometer.

The electrical records were suitably amplified through a capacitor coupled push-pull amplifier and displayed on a dual beam cathode ray oscilloscope. Records were made on continuously moving film from the face of the cathode ray tube.

All injections were made in the femoral vein.

Cats anesthetized with sodium pentobarbital were used in all of the experiments.

Using the type of preparation described above, the following results were obtained.

The slow injection of DFP resulted in the paralysis of spontaneous respiratory activity by an action on the central nervous system. This paralysis preceded the cardiovascular collapse, and occurred simultaneously with the cessation of air movement in the trachea. If artificial respiration was not administered the cat died of anoxia. If death was prevented by the use of artificial respiration spontaneous recovery of the respiratory center appeared.

Unfortunately the systemic administration of DFP does not permit an analysis of the possible direct stimulant action of this compound on the respiratory center. The reason for this is that DFP, or acetylcholine, acts not only on the respiratory center, but there are also peripheral actions which indirectly alter the respiratory pattern. These actions are primarily at the neuro-muscular junctions of the bronchi, the diaphragm, the intercostal muscles, and the cardiovascular system. DFP causes severe bronchoconstriction. In addition, the administration of DFP causes fasciculation of the diaphragm and the intercostal musculature, followed by paralysis of these muscles. Further, there is a severe fall in blood pressure. Each of these phenomena is conducive to hypercapnea which in turn stimulates the respiratory center. Therefore,

it is virtually impossible to purposefully distinguish excitatory actions of DFP directly on the respiratory center from those actions which appear reflexly. Central respiratory stimulation was seen in one experiment in which DFP was administered very slowly. In this instance it was evident that a direct stimulation of the respiratory center preceded any gross changes in blood pressure, diaphragmatic or intercostal activity, or bronchiolar size.

In order to ascertain that the paralytic actions of DFP on the respiratory center are not the consequence of reflex activity initiated in known chemo or pressor receptors, DFP was administered to cats in which the vagus and glossopharyngeal nerves had been cut. The result was again paralysis of the respiratory center.

In addition to the conclusion that DFP does have a direct action on the respiratory center, these experiments provide strong evidence of a cholinergic mechanism.

A truly cholinergic mechanism in the respiratory center would be indicated not only by paralysis of the respiratory center by DFP, but also by atropine antagonism of the phenomenon.

Because spontaneous recovery of central respiratory activity had been observed the evaluation of atropine antagonism offered considerable difficulty. In order to distinguish atropine antagonism, spontaneous recovery was characterized. To do this, a dose of DFP was determined which was known to cause a minimum of ten minutes of central respiratory paralysis before spontaneous recovery intervened. The administration of atropine two and one-half minutes after the onset of respiratory paralysis resulted in the prompt return of central respiratory activity.

Atropine antagonism of the paralytic actions of DFP provides additional evidence of a cholinergic mechanism.

In order to determine the actions of atropine *per se* on the spontaneous activity of the respiratory center this compound was administered to cats in the absence of previous medication, except for anesthesia. The atropine was administered slowly, and in multiple small doses to the point of death. Except for pre-terminal respiratory stimulation there was no action on the respiratory center. From these data it becomes evident that atropine antagonism of the central respiratory paralysis produced by DFP is not a consequence of a stimulant action on the part of this drug, but rather a specific antagonism to excess quantities of acetylcholine.

Further evidence in favor of a cholinergic mechanism in the respiratory center was provided by the fact that the administration of curare in doses just adequate to cause neuro-muscular paralysis resulted in inhibition of central respiratory activity. This appeared not only in the cat with intact peripheral chemo and pressor receptors, but also in cats where the vagus and glossopharyngeal nerves had been cut.

The respiratory inhibition caused by curare was of shorter duration than the neuro-muscular block caused by this drug. In addition, the inhibition caused by curare was obtainable only in cats with at least partially functioning neuro-muscular transmission. In the face of neuro-muscular block consequent to just paralytic doses of curare, once recovery of central respiratory activity appeared, extremely large doses of curare were required to reproduce the central inhibition. On the other hand, if neuro-muscular transmission had even partially returned, central respiratory inhibition was obtainable with doses just sufficient to cause neuro-muscular block. In order to exclude the possibility of the phenomenon being a consequence of blood gas changes resultant to neuro-muscular paresis prior to complete paralysis, curare was administered to a cat completely dependent upon artificial respiration. This was accomplished by performing a complete bilateral pneumothorax. Again, the administration of curare resulted in central respiratory inhibition.

The central respiratory inhibition caused by a direct action of curare was therefore the third reason in favor of the existence of a cholinergic mechanism in the respiratory center.

Earlier work on peripherally located synapses has shown that the administration of epinephrine and norepinephrine to known cholinergic synapses resulted in inhibition of synaptic transmission. Consequently, it was thought that the actions of epinephrine and norepinephrine on the respiratory center would provide an additional test of the hypothesis of cholinergic transmission in the respiratory center. The administration of epinephrine and norepinephrine in these experiments resulted in inhibition of central respiratory activity. This occurred not only in cats with intact vagus and glossopharyngeal nerves, but also in cats with vagus and glossopharyngeal nerves cut. In addition, respiratory inhibition frequently occurred prior to any change in blood pressure. Therefore we know that epinephrine and norepinephrine inhibition of respiratory activity is direct on the respiratory center. Epinephrine inhibition of the respiratory center was accomplished only by the use of large doses of this drug. Therefore, these data only indicate the presence of an adrenergic mechanism, and do not of necessity include a normally operating physiologic mechanism.

The observation of early spontaneous recovery seen after DFP was unexpected. One might reasonably expect the pharmacological actions of DFP to last as long as its biochemical reaction with cholinesterase. Since the combination between cholinesterase and DFP has been shown to be irreversible *in vitro*, and since the regeneration of cholinesterase takes place only after a period of days, the spontaneous recovery of respiratory activity superficially appears to be incompatible with a cholinergic mechanism. This phenomenon, however, can be explained on the basis

of at least four hypotheses and still not detract from the concept of cholinergic transmission. These four theories are: first, that DFP reacts with cholinesterase irreversibly *in vitro*, but *in vivo* the reaction is reversible; the second hypothesis is that DFP reacts irreversibly with the cholinesterase we presently know, but that there is another type of cholinesterase intimately associated with the hydrolysis of acetylcholine which reversibly combines with DFP; the third hypothesis is that the post-synaptic cell becomes accommodated to the excessive quantities of acetylcholine and consequently repolarizes; the fourth hypothesis is that DFP has some action other than the inactivation of cholinesterase. Thus, even the spontaneous reversal of the paralytic actions of DFP is compatible with the concept of cholinergic transmission.

From the preceding data the following conclusions are justified.

There is a central component in the toxicity of DFP which manifests itself by paralysis of the spontaneous rhythmic discharge of the respiratory center. Because this phenomenon occurs after exclusion of known pressor and chemo receptors it is thought to be direct on the respiratory center.

In addition, the respiratory paralysis produced by DFP is both spontaneously reversible, if the cat is maintained on artificial respiration, and may be antagonized by the use of atropine.

The administration of atropine to the same type of preparation has shown that atropine, *per se*, has no action on the respiratory center, except for pre-terminal excitation when large quantities of atropine are administered.

The administration of curare to cats causes inhibition of central respiratory activity. This appears in cats lacking known peripheral chemo and pressor receptors, and in cats entirely dependent upon artificial respiration for pulmonary ventilation. Therefore this central inhibitory action of curare is thought to be direct on the respiratory center.

Because DFP causes central respiratory paralysis, and because this paralysis is amenable to treatment by atropine, and since, in addition curare causes inhibition of the respiratory center, it is concluded that there is a cholinergic mechanism in the respiratory center.

The systemic administration of epinephrine or norepinephrine results in a transitory inhibition of spontaneous central respiratory activity. This phenomenon occurs in the intact cat, and in cats lacking known chemo and pressor receptors. Thus, it may be concluded that this is a direct action on the respiratory center.

Since the phenomenon of respiratory inhibition produced by epinephrine sometimes precedes the cardiovascular response to epinephrine, it may be concluded that inhibition is not causally related to changes in blood pressure.

Because epinephrine and norepinephrine have a direct action on

the respiratory center it may be concluded that there is an adrenergic mechanism in the respiratory center. Since the quantities of epinephrine used were large, however, this action cannot be presumed to be a normally operating physiologic mechanism.

PHYSIOLOGICAL EFFECTS OF THE BACTERIAL POLY-SACCHARIDE (P-35) ON THE BLOOD PRESSURE OF SPLENECTOMIZED AND SHAM-SPLENECTOMIZED RABBITS

by STYLIANOS D. PROTONOTARIOS*

INTRODUCTION

Even though surgery, radiation, and X-ray therapy are still the only scientifically approved methods for treating early stage cancer, an intensive research has been and still is under way seeking chemical agents which will be able to damage neoplasms without injuring the healthy tissues of the host.

One of the most promising specific and potent agents for the chemical treatment of certain neoplasms, in experimental animals, has been a bacterial polysaccharide known as the "Shear Polysaccharide". This substance has been prepared by Dr. M. J. Shear of the Cancer Institute of the National Institutes of Health, from the culture filtrate and the bacterial bodies of *Serratia marcescens* (*Bacillus prodigiosus*). Earlier fractionations of this chemical agent have had several limited clinical trials and have been found to precipitate toxic systemic reactions in patients, such as febrile reaction, hypotension, and leucocytosis, even when administered in doses too small to elicit any significant therapeutic benefit.

If the toxicity of this chemotherapeutic agent could be controlled, a great stride would have been made as the substance definitely causes hemorrhagic lesions and necrosis in cancerous growths.

By his untiring efforts to control the toxic effects of this drug, which are apparently not related to its tumor necrotizing potency, Dr. Shear has produced many lots (fractions) by successive fractionations of the bacterial polysaccharide.

Much work has been done in this laboratory with several of the earlier fractions of the Shear polysaccharide. Preliminary experiments with one of these fractions by Leese and Greene on splenectomized and sham-splenectomized rabbits indicated that the spleen may be an essential organ protecting the animal against some of the toxic effects of these polysaccharides. Exploratory experiments by the author, on the most recent lot (P-35) of the Shear polysaccharide have shown that an intensive comparison should be made between the effects of P-35 and the widely investigated P-25 lot.

The plan of the present investigation was as follows:

1. To study the general response of the normal unanesthetized rabbit

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to this lot of the Shear polysaccharide known as P-35 and to compare the results with those obtained with earlier fractions.

2. To investigate the vascular responses of the anesthetized rabbit to repeated infusions of the P-35 lot.

3. To investigate the vascular responses of anesthetized splenectomized and anesthetized sham-splenectomized rabbits and compare them with each other.

4. To evaluate the vascular responses and shock-like states resulting from the administration of both P-25 and P-35 lots to anesthetized rabbits under the above experimental conditions.

HISTORY

The pioneering work of Coley during the period of 1891-1936 represented an effort directed toward establishing a form of cancer chemotherapy based on the use of crude bacterial extracts. His lifelong interest in the study of bacterial toxins was aroused when a patient recovered from a thrice recurring inoperable lymphosarcoma of the neck after an attack of Erysipelas. It is historically interesting to note that many of the early chemotherapeutic attempts antedate the discoveries of radium (1898) and X-ray (1895) which progressed more rapidly in the treatment of cancer.

Comprehensive bibliographic references pertaining to early attempts at the treatment of neoplasms by bacterial infections and injections of crude toxins are found in the papers of Hauts, Swift, and Coley; Shear *et al.*; and Schwartzman.

Despite an early beginning, chemotherapeutic studies did not progress as well as those involving radium or irradiation therapy. For example, the separation of the tumor necrotizing fraction from toxic and inert contaminants present in crude bacterial extracts was not achieved until 1936. At that time Shear and Andervant prepared a highly potent concentrate from the filtrates of broth cultures of *Escherichia coli* (B. coli) which was rich in polysaccharides, almost negative in protein fractions, and capable of producing hemorrhage and necrosis in mouse sarcoma 37 in doses as low as 0.4 microgram per mouse.

However, the most significant contribution toward understanding the chemical nature of the bacterial products which produced necrosis in tumors, was made when Shear *et al.*, published results of their work with the hemorrhage-producing, tumor-necrotizing fraction from *Serratia marcescens* (B. prodigiosus). They reported that the active fractions from *Serratia marcescens* were high in polysaccharide and their best preparations were negative in tests for protein. Subsequent purifications of the bacterial extract, corroboration of its polysaccharide nature, and determination of many of its chemical and physical properties were announced later by Shear and his co-workers.

Histological changes taking place in a tumor after polysaccharide administration were described by Diller, who reported that B. prodigiosus polysaccharide injected intraperitoneally or intravenously into a tumor-bearing host, caused marked nuclear changes in tumor cells which in a considerable proportion of cases, produced irreparable cell damage.

Large numbers of degenerating cells were also produced in the spleen and bone marrow following the polysaccharide administration, but the dosage required to do so was approximately ten times that needed to produce damage in tumor cells.

The mode of action of polysaccharide on tumor cells has not been ascertained completely. Apparently, the cells most affected are those which are in some stage of division when first subjected to the impact of polysaccharide.

By means of a transparent chamber technic, Algire *et al.*, have observed progressive decreases in the rate of blood flow and percentage of functional vessels to transplanted sarcomas after polysaccharide treatment of the host. Vascular occlusion and stasis in both normal and neoplastic tissues associated with edema following treatment have suggested to them the presence of increased capillary permeability.

The degree of hemorrhage and necrosis produced in tumors of the same size varies directly with the amount of polysaccharide administered to the host. Although necrosis was usually associated with hemorrhage, there was no causal relation between the two.

The systemic effects of a single dose of polysaccharide resembled those of shock. The animal was prostrated, respiration was labored, diarrhea was not uncommon, muscle tone was decreased, circulation time was increased, and there was disturbance of the temperature regulating mechanism.

Beck *et al.* have demonstrated a drop in blood pressure to about 50 mm. Hg., in a period of from two to four hours after intraperitoneal injection of polysaccharide. Employing direct cannulation, Leese *et al.* have recorded mean systolic blood pressures as low as 20 mm. Hg. following intravenous infusion of sublethal doses of polysaccharides in rabbits.

After the administration of polysaccharide, leucocytosis was observed by Algire in the mouse and human. Oakey, in a short summary of the reactions of nine patients to the Shear polysaccharide mentioned that the leucocytosis was preceded by a leucopenia. This was later confirmed by Leese *et al.*

METHODS AND MATERIALS

The animals used in this investigation were male and female rabbits weighing between 3 and 4.5 kilograms. The total number of the

animals used was thirty-six. All were kept in separate cages and fed freely on standard feed (Purina Lab Chow) and water *ad lib*. Twenty-four of the rabbits were splenectomized and twelve were sham-splenectomized.

Surgical anesthesia for the splenectomies and sham-splenectomies as well as for the terminal experiments to record the blood pressure responses were induced and maintained with nembutal (Penobarbital Sodium) injected intraperitoneally. The total initial dose administered was calculated on the basis of 40 milligrams nembutal per kilogram body weight of the rabbit.

Following anesthesia, the animal was secured to an operating rabbit board in the supine position and the area around the linea alba was shaved. A median longitudinal incision was made through the skin, superficial fascia, and muscle layers along the linea alba. After the dissection, the spleen was exposed and taken out by cutting all connections between the previously ligated splenic blood vessels and the spleen. The muscle and skin layer along the incision were separately sutured and post-operative care for the animal was carefully followed. The same operating procedure was followed for the sham-splenectomies, with the exception that in these animals the spleen was left intact after its manipulation.

For recording blood pressure responses, approximately two-and-one-half to three months after the first operation, each rabbit was injected again intraperitoneally with the same amount of nembutal (40 mg./kg.) to induce surgical anesthesia. Following anesthesia, the rabbit was tied down on the operating board in the supine position and the ventral surface of the neck and the immediately adjacent areas were shaved. A median longitudinal incision was made and the trachea, left carotid artery, left and right vagi, and the left external jugular vein were exposed. The carotid artery was freed of its sheath, cannulated for the purpose of recording blood pressure, and connected to a "U" shaped mercury manometer having a conventional type float and writing arm in the open end of the manometer. The jugular vein was cannulated and connected to a calibrated biurette serving as a reservoir for saline.

A single permanent record of respiration, blood pressure, time intervals, stimulation, and injection signals were made by having the writing arms of the respective recording devices inscribe on smoked drum kymograph paper mounted on a motor-driven kymograph.

Extracts of the polysaccharide preparation from the *Serratia marcescens* designated P-25 and P-35 were generously supplied by Dr. M. J. Shear of the National Institutes of Health, in order to study their effects on the blood pressure responses of the rabbit.

The physiological effects of the drugs adrenalin, acetyl-beta-methyl-

choline (mecholy), pitressin, and histamine were recorded following their administration after the infusion of polysaccharides. The response to electrical stimulation of the vagi was also observed.

For an evaluation of the effects of P-35 on the blood pressure of splenectomized versus the sham-splenectomized rabbits, a statistical analysis of the difference-mean as outlined by Albritton's book of "Experimental Design and Judgement of Evidence" was made.

EXPERIMENTAL RESULTS

Exploratory studies on the action of P-35 on hematocrit determinations, white blood counts, and febrile reaction were made on four unanesthetized splenectomized and sham-splenectomized rabbits.

The animals were injected intravenously with 1,000 grams of P-35/kg. body weight. Blood samples were taken from each animal before the administration of the drug at one, two, and twenty-four hours after the infusion.

The hematocrit determinations on the one- and two-hour samples after the P-35 infusion, did not show any hemoconcentration. However, those of the twenty-four hour samples showed a hemoconcentration of about 12 to 15 per cent compared with that of the pre-injection level.

The effect of the polysaccharide P-35 on the white blood count, showed that in the one- and two-hour samples a drastic leucopenia occurred followed by a marked leucocytosis in the twenty-four hour samples. Both leucopenia and leucocytosis involved a decrease and an increase, respectively, in the neutrophils and lymphocytic cells.

The rectal temperature of the rabbits was recorded at regular intervals before and after the injection of P-35. The greatest increase in the temperature occurred five hours after the administration of the drug.

The blood pressure responses of the rabbit to repeated infusions of P-35 were studied on six splenectomized and sham-splenectomized nembutal anesthetized rabbits.

In all cases the repeated infusions of P-35 did not produce any abrupt changes in blood pressure. They rather temporarily interrupted the gradual decrease of the blood pressure following the initial infusions. It should be emphasized that despite the fact that some animals received as much as 2,000 gamma of P-35/kg. per body weight, their blood pressure did not reach the low level which was reached in other animals receiving an initial dose of 1,000 gamma/kg. and no additional doses.

The variations of blood pressure responses to P-35 by the sham-splenectomized rabbits was studied on six rabbits. The dose of polysaccharide injected in each case was calculated on the basis of 1,000 gamma P-35/kg. per body weight.

According to the records obtained, a slight increase in blood pressure occurred immediately after the infusion of the drug and this increase was followed by a gradual decrease beginning five to ten minutes later. In almost all animals the decrease reached its lowest level (40 mm. Hg. below the pre-injection level) in from thirty-five to seventy-five minutes. Then, the blood pressure began to increase slowly reaching a high level approximately two-and-one-half hours after the administration of the P-35.

The blood pressure variations of nembutal-anesthetized splenectomized rabbits to P-35 was studied on 12 rabbits.

As with the previous group, here again, a gradual decrease in the blood pressure began to take place at about five to ten minutes, following a slight increase, after the infusion of the drug. The lowest level was reached between forty-five to seventy-five minutes, but it was not as marked as in the sham-splenectomized group. The response of the blood pressure to return to almost normal levels, which was seen in the previous group, was absent here.

The vasodepressor effects of P-25 on splenectomized rabbits were studied on three rabbits. The results obtained showed that over a long period of time P-25 produced the same results in blood pressure as did P-35. However, the infusion of P-25 produced a more pronounced decrease in the blood pressure in the first fifteen minutes.

An attempt to equate the effects of the various experimental factors bearing on the blood pressure was made by injecting three splenectomized rabbits with an amount of saline equivalent to that amount of saline plus the drug which was given to the previous rabbits.

An examination of the records obtained shows that in this case the blood pressure remained at the same level, following the administration of saline, and throughout the entire experiment.

DISCUSSION

In order to get a better understanding of the difference between the effects of P-35 on the splenectomized and sham-splenectomized rabbits, the author feels that a discussion of the splenic functions at this point is important.

The spleen is a large organ sometimes considered to be an enormous lymph node weighing 100-150 grams, with a very rich blood supply. It is a collection of supporting, vascular, hematopoietic, and hemolytic tissues, which can be removed without any apparent ill effect to the individual.

Nervous control of the spleen is exerted by the autonomic nervous system, and various stimuli may cause contraction or dilatation of the organ. A dilated spleen, according to Barcroft, may store as much as

20 per cent of the circulating blood. Conditions such as hemorrhage, excitement, exercise, and, in general, agents inducing anoxemia may cause contraction. The spleen is also considered to have important functions in connection with the destruction of the red blood cells.

In embryonic life, and in the adult in certain types of anemia, the spleen produces leucocytes and red cells, just as the red marrow does. Splenectomy causes a profound change in red cells and their destruction diminishes. Blood counts before and after splenectomy have shown that the red cell count, white cell count, and platelet count all increase after splenectomy. The spleen controls, to some extent, the growth and discharge of the bone marrow and lymphoid tissue blood cells through humoral factors.

The effect of the polysaccharide P-35 on the white blood count, showed results parallel to those obtained previously in this laboratory. The one- and two-hour samples after the administration of the drug showed a drastic leucopenia involving a decrease in both the neutrophils and the lymphocytes. The twenty-four hour samples showed a leucocytosis which was much more pronounced in the splenectomized rabbits.

The increase in rectal temperature is in accord with previous studies done by Beck on the febrile reaction of polysaccharide in normal rabbits. He was of the opinion that the site of the polysaccharide action in producing the febrile reaction was the central nervous system.

Repeated infusions of the polysaccharide P-35 decreased the responsiveness of the blood pressure of the anesthetized rabbits. This tachyphylactic (rapid protection) type of response was previously described by Leese *et al.* and it was seen here, in the absence of a greater drop in blood pressure following the administration of additional doses of the polysaccharide P-35. No significant difference was seen, in the type of response, between the splenectomized and sham-splenectomized rabbits.

The blood pressure of both the splenectomized and sham-splenectomized rabbits decreased considerably following the administration of 1,000 gamma of P-35 per kg. body weight. A statistical analysis showed the drop in blood pressure to be significant in the period between forty-five minutes and two hours and fifteen minutes after the infusion of the drug.

After examining all the facts, this investigator feels that the polysaccharide P-35 caused vasodilation of the splenic vessels during the first one-half hour following its administration with the result that an excessive amount of blood was stored here and as a consequence the blood pressure of the sham-splenectomized rabbits fell below that of the rabbits without a spleen. Then again, the blood pressure of the sham-splenectomized group began to show a tendency to return to normal as soon as various conditions which were contributing factors to the splenic contraction began to influence the spleen to contract and empty its storage of

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A STUDY AND ANALYSIS OF THE RESERVE OFFICER CORRESPONDENCE COURSE PROGRAM OF THE UNITED STATES NAVY

by BRUCE HAROLD WILLIAMS*

INTRODUCTION

The United States Naval Correspondence Course Center of Brooklyn, New York, administers correspondence courses for Regular and Reserve officer and enlisted personnel, whether on active or inactive duty.

The purpose of this study was to make an analysis of the Reserve Officer Correspondence Course Program of the United States Navy in order to (1) determine whether those Naval Reserve officers who enroll in the program differ from non-enrollees in certain selected characteristics; (2) ascertain whether or not any relationship exists between enrollees' persistence in completing their courses and the selected characteristics; (3) reveal enrollees' stated reasons for enrolling; (4) determine what reasons non-enrollees give for not having enrolled; and (5) find out why some enrollees do not complete their courses.

The study was divided into two major parts—one giving the background for the study, the second presenting the analysis of the findings of the study.

BACKGROUND

History of Correspondence Study

Although many individuals regard correspondence study as ineffective, numerous scientific investigations provide data which indicate that correspondence study, when properly conducted, is as effective as resident study.

Less than one hundred years old, correspondence course study has become an important method of providing instruction for adults, for public school children, and for members of the Armed Forces. The earliest correspondence school appears to have been a language school in Berlin, founded in 1856. The Chautauqua Movement, which started in 1873, is generally considered the real beginning of correspondence study in this country. University extension, including correspondence study, first appeared among the formal divisions of an American university in 1892 with the founding of the University of Chicago.

Correspondence study had its beginning on the primary and secondary school levels in 1908 with the Calvert Day School in Baltimore, Maryland. The most significant development, however, was the Benton Harbor plan, initiated in 1923, whereby correspondence study was used

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as a means of enriching the high school curriculum. This plan is used today by many high schools.

Proprietary correspondence schools had their beginning in 1891 with the founding of the International Correspondence Schools. Although some unethical schools have developed in this field, the National Home Study Council with the help of the Federal Trade Commission has made much progress in promoting sound educational standards and ethical business practices among proprietary schools.

The first correspondence course developed by the Navy was offered by the Naval War College in 1914. In 1923 the Bureau of Navigation started the officer correspondence course program, the program with which this study is concerned, which is administered by the Naval Correspondence Course Center at Brooklyn, New York. The primary motives for enrolling in the program have been to qualify for promotion and to earn retirement points. A number of other correspondence course programs are also offered by the Navy.

The primary objective of the officer correspondence course program is to provide all Regular Navy and Naval Reserve officers (whether on active or inactive duty) with a wide selection of courses which may be used during off-duty hours for increasing their knowledge and proficiency in the duties of their rank or specialty, and at the same time to enable Naval Reserve officers on inactive duty to earn promotion and retirement point credits.

Procedure of the Study

The study was confined to the officer correspondence course program of the United States Naval Correspondence Course Center and dealt only with Naval Reserve officers. All results, conclusions, and recommendations, therefore, apply only to the Naval Correspondence Course Center and only to the officer correspondence course program of that center as conducted for Naval Reserve officers.

Data for this study were collected by means of questionnaires mailed to 1,211 officers who had completed a course, 1,629 officers who had dropped a course, and 1,236 officers who had never enrolled for a course. Returns were obtained from 95 per cent of those who had completed a course, from 78 per cent of those who had dropped a course, and from 78 per cent of those who had never enrolled for a course.

FINDINGS

Differences Between Enrollees and Non-Enrollees

1. Enrollees come from all officer specialties in proportion to the number of officers in each specialty, with the following exceptions: (a) civil engineers enroll much more frequently than do other officers; (b) naval

aviators, specialists in engineering, specialists in communication supplementary activities, and legal officers enroll somewhat more frequently than do other officers; (c) intelligence officers enroll somewhat less frequently than do others; and (d) medical officers are far below normal in the number of enrollees.

2. Although lieutenant, lieutenant commander, and commander ranks constitute only about 47 per cent of the officers in the Naval Reserve, they account for almost 56 per cent of the enrollments. Ensigns, on the other hand, who comprise 18 per cent of Naval Reserve officers, account for only 10 per cent of enrollments.

3. Only 2 per cent of Naval Reserve officers are on active duty, yet 10 per cent of enrollments come from this group. The 11 per cent who are members of the Organized Reserve account for 24 per cent of the enrollments. The remaining 87 per cent of Naval Reserve officers belong to the Volunteer Reserve, but this group constitutes only 66 per cent of all enrollments.

4. Enrollees have served an average of 8.29 years in the Armed Forces as compared with 8.73 years for all officers in the Naval Reserve.

5. The age of the average enrollee is 32.6 years compared with an average age of 33.1 years for all officers of the Naval Reserve.

6. Male officers show a slightly higher tendency to enroll for courses than do female officers, but the difference is not significant.

7. Whether an officer is married or single appears to have no effect upon his decision to enroll for correspondence courses, but enrollment of divorced officers is somewhat below normal.

8. Officers who have attended college but received no degree comprise 11 per cent of those who have never enrolled for a course but amount to 16 per cent of all enrollees. Officers with a Doctor of Philosophy degree or the equivalent constitute 13 per cent of the non-enrollees but only 7 per cent of the enrollees.

9. Enrollments from the various naval districts are in proportion to the number of Naval Reserve officers in these districts, with three exceptions: (a) the Ninth Naval District, which has 24 per cent of the officers, accounts for only 19 per cent of the enrollments; (b) the Twelfth Naval District, with 7 per cent of the officers, accounts for 10 per cent of the enrollments; and (c) the Fourteenth Naval District, which has only 0.3 per cent of the officers, has 0.6 per cent of the enrollees.

10. The ratio of enrollees to non-enrollees is the same for all sizes of communities except in cities of 500,000 population or more. Only 27 per cent of the enrollees come from these cities, but 31 per cent of the non-enrollees are in these cities.

11. Of all enrollees, 60 per cent expect to qualify for retirement; only 13 per cent of non-enrollees expect to qualify.

12. Enrollees expect to earn most of their retirement points from drills,

correspondence courses, and active duty, in the order named. Non-enrollees expect to earn most of their retirement points from correspondence courses, from drills, and by service on active duty, in the order named.

13. Enrollees earned an average of 33.78 points on active duty during the year preceding this study as compared with an average of 5.70 points earned by non-enrollees. One-half of the enrollees did not earn a single point by active duty; about 88 per cent of the non-enrollees did not earn points on active duty. Over two-thirds of all enrollees who earned points on active duty did so by taking two weeks' training duty.

14. In one year enrollees earned 19.92 points at drills as compared with an average of only 2.73 for non-enrollees. Over 60 per cent of all enrollees earned one or more points at drills as compared with only 11 per cent of the non-enrollees.

15. The average enrollee earned 9.24 points through correspondence courses during the year preceding this study. However, 49 per cent of the enrollees during the time of this study did not earn a single point by correspondence study.

16. Over 88 per cent of the enrollees expect to qualify for their next promotion. Only 33 per cent of the non-enrollees expect to qualify, 42 per cent are undecided, and 25 per cent do not expect to qualify.

Differences Between Officers Who Complete Courses and Those Who Drop Courses

1. The ratio of those who completed their courses to those who dropped is the same for all officer specialties with the following exceptions: (a) deck officers show a slightly higher completion rate than do other officers; and (b) submarine officers, intelligence officers, and supply officers have a slightly lower completion rate than other officers.

2. Lieutenant commander and commander ranks account for 24 per cent of all completions but only 18.5 per cent of the drops. On the other hand, the rank of ensign accounts for only 9 per cent of the completions but 12 per cent of the drops.

3. Of the five types of Naval Reserve officers (those on active duty, those in the Organized Reserve, those in the Voluntary Reserve, those in the Marine Reserve, and those in the Fleet Reserve), the completion rate among officers of the Organized Reserve is much higher than for any other group. The completion rates for officers in the Volunteer Reserve and officers in the Fleet Reserve are much lower than the average.

4. Those who completed their courses have served an average of 9.15 years in the Armed Forces as compared with an average of 8.53 years for those who dropped their courses.

5. The average age of those officers who completed their courses is

33.74 years compared with an average of 32.73 years for those who dropped their courses.

6. Male officers show a slightly higher tendency to complete their courses than do female officers, but the difference is not significant.

7. Married officers have a slightly better completion rate than do other officers, while divorced officers have a slightly lower completion rate.

8. There is no apparent difference between the level of educational attainment of those who completed their courses and those who dropped them.

9. In only one naval district did the completion rate differ from the average. The Twelfth Naval District accounts for 11 per cent of the completions but only 8.4 per cent of the drops.

10. The size of the population of the community has no apparent effect upon the completion rate.

11. Of those who finished their courses, 65 per cent expect to qualify for retirement compared with only 42 per cent of those who dropped their courses. Of those who completed their courses, 27 per cent are undecided whether to attempt qualifying for retirement as compared with 40 per cent of those who dropped their courses.

12. Officers who completed their courses and officers who dropped expect to earn their retirement points (a) by drills, (b) by correspondence study, and (c) by active duty. It is interesting to note, however, that a considerably higher percentage of those who dropped expect to use active duty than do those who completed their courses.

13. Those officers who completed their courses earned an average of 34.84 points by active duty during the preceding year as compared with an average of 26.48 points for those officers who dropped their courses.

14. Those officers who completed their courses earned an average of 20.74 points through drills during the previous year as compared with an average of only 17.42 points for those who dropped their courses.

15. Officers who completed their courses earned an average of 10.44 points through correspondence study the previous year as compared with an average of only 3.97 points earned by those who dropped their courses.

16. Of those officers who completed their courses, 93 per cent intend to qualify for their next promotion compared with only 72 per cent of those who dropped their courses.

Why Naval Reserve Officers Enroll in Correspondence Courses

1. Over two-thirds of all enrollments are in two basic courses—50 per cent in *Navy Regulations* and 17 per cent in *Naval Orientation*.

2. The primary reason for enrolling is to earn promotion points.

This was stated as the most important reason by 44 per cent of the enrollees.

3. The second most important reason for enrolling (listed first by 16 per cent of the enrollees) is to earn retirement points.

4. Approximately 14 per cent of the enrollees listed as the primary reason for enrolling a desire to broaden their knowledge of naval subjects.

5. About 11 per cent stated that their main reason for enrolling was to learn more about the duties of their rank and specialty.

6. Those officers who have enrolled for correspondence courses offered by colleges, universities, or proprietary schools appear no more likely to enroll for courses offered by the Naval Correspondence Course Center than are those officers who have not enrolled for such courses in colleges, universities, or proprietary schools.

7. Officers who have enrolled for correspondence courses offered by other military schools are, however, much more likely to enroll for courses offered by the Naval Correspondence Course Center than are officers who have not taken these other military courses.

Why Some Naval Reserve Officers Have Not Enrolled in Correspondence Courses

1. Of all the non-enrollees, 61 per cent listed "insufficient time" as the most important reason for not enrolling.

2. Of those who marked a second reason for not enrolling, 21 per cent stated that they intend to enroll at a later time.

3. Approximately three-fourths of all non-enrollees had some knowledge of the retirement program.

4. Only two-thirds of the non-enrollees know that they must complete certain correspondence courses before they could be promoted to the next higher rank while on inactive duty.

5. By far the most effective medium for promulgating information about correspondence courses to non-enrollees is the periodical, *The Naval Reservist*. Approximately three-fourths of this group read *The Naval Reservist* each month.

Why Some Enrollees Do Not Complete Courses

1. The primary reason given by 37 per cent of enrollees for not completing a course was that their occupation interfered with their study.

2. The second most important reason given was lack of time.

3. Whether an enrollee has completed previous courses or not appears to have no effect on his reasons for dropping a course.

4. The same reasons for dropping a course are given by those who submitted more than 50 per cent of their assignments before dropping as are given by those who finished less than 50 per cent of their assignments before dropping.
5. Judged by grades made on previous courses, those enrollees who drop courses are equally as good students as those who have never dropped a course.
6. Those officers who dropped a course in February 1951 had almost as good completion record on earlier courses as did those officers who completed a course in February 1951.
7. Officers who drop courses and officers who complete courses have similar enrollment records in correspondence courses offered by colleges, universities, and proprietary schools.
8. Officers who complete their courses have a slightly higher enrollment in other military correspondence course programs than do officers who drop their courses.
9. Officers who drop courses complete an average of 2.13 assignments before dropping. The median number of assignments completed before dropping is only one assignment. Of all officers who drop a course, 57 per cent submit no more than one assignment before dropping. Almost 43 per cent do not submit a single assignment.
10. Courses which account for a disproportionately high number of drop-outs are *Navy Regulations* and the supply courses.
11. The length of a course has no apparent effect upon the drop-out ratio.

CONCLUSIONS

The purpose of this study was to find answers to five questions:

1. *Do those Naval Reserve officers who enroll in the officer correspondence course program of the Naval Correspondence Course Center differ from non-enrollees in certain selected characteristics?* Enrollees do differ significantly from non-enrollees with respect to rank, duty status, number of years in the Armed Forces, intention to qualify for retirement, intended method of earning retirement points, points earned on active duty, points earned through drills, and intention to qualify for promotion. Enrollees differ from non-enrollees only slightly with respect to officer specialty, age, sex, education, naval district, and population of community. They do not differ significantly with respect to marital status.
2. *Does any relationship exist between enrollees' persistence in completing their courses and the selected characteristics?* There is a highly significant difference between those who complete their courses and those who do not with respect to such characteristics as rank, duty status,

number of years in the Armed Forces, age, intention to qualify for retirement, the number of retirement points earned through drills, the number of retirement points earned by correspondence study, and intention to qualify for promotion. There is very little difference between these two groups with respect to officer specialty, sex, marital status, naval districts, intended methods of earning retirement points, and the number of retirement points earned on active duty. There is no significant difference between these two groups with respect to level of educational attainment and size of community.

3. *Why do Naval Reserve officers enroll in correspondence courses?* It seems apparent that the primary reason for enrolling is to earn promotion points. Other important reasons include a desire to earn retirement points, a desire for a broader knowledge of naval subjects, and a desire to learn more about the duties of one's rank and specialty.

4. *Why have some Naval Reserve officers never enrolled for correspondence courses?* There seems to be three primary reasons: (a) insufficient time, (b) deferment of enrollment to a later date, and (c) lack of knowledge of the program.

5. *Why do some enrollees fail to complete their courses?* Four conclusions may be drawn: (a) Officers who drop a course do not differ with respect to selected characteristics from officers who complete courses. They are quite likely to complete the next course for which they enroll. They have completed almost as many courses in the past as have those officers who have never dropped a course. Their grades on previous courses are as high as those obtained by students who have never dropped a course. (b) Those who drop a course normally do so during the first or second assignment. (c) Nearly all enrollees agree that the primary reasons for dropping a course are that their occupations interfered with their study and that they had insufficient time. (d) The nature of the course undoubtedly has considerable effect upon the completion rate.

THE CONTRIBUTIONS OF THE AMERICAN COUNCIL ON EDUCATION TO STUDENT PERSONNEL WORK IN HIGHER EDUCATION

By WILLARD WILLIAM BLAESSER*

PURPOSE OF THE STUDY

The purpose of this study is to trace and describe the contributions of the American Council on Education to the student personnel movement in higher education. This study should be useful to (1) professional personnel and guidance associations which may be charting long-range developments without knowledge of the Council's previous work, or of its potential for cooperation with professional associations and national agencies; and (2) the Council itself, now in the process of determining relative emphases in the years ahead concerning the various phases of its program in higher education.

SOURCES OF DATA

Data for the study were secured from the files and publications of the Council starting with the founding of the organization in 1918, interviews with the president of the Council and his staff, and personal correspondence.

A FRAME OF REFERENCE FOR THE STUDY

American higher education was concerned with the student as an individual until the middle decades of the nineteenth century. Then the influence of secularization, specialization of knowledge, and the increasing emphasis upon intensive scholarship and research resulted in an intellectual and impersonal approach to students. Cowley places this period from 1870 to 1920. Student personnel services of a sort were kept alive during this fifty-year period, but were minimized.

Reactions against the treatment of students *en masse* came from the humanitarians, far-seeing college presidents, the applied psychologists who began to identify individual differences in intellectual capacities and personal characteristics, and the students themselves who began to build an extensive extra-curriculum.

World War I gave tremendous impetus to the development and acceptance of testing and other tools and personnel procedures, as developed by psychologists who had participated in the Army personnel system and then moved into colleges and universities.

* B.S. 1934, University of Wisconsin; A.M. 1940, University of Wisconsin; Ed.D. conferred November 11, 1953.

The rise of college personnel work as a clearly identifiable movement became evident in the 1920's. It was a period of remarkable growth and change in higher education, affected by the additional forces of increases in enrollment, expansion of the vocational guidance movement, impact of social and economic forces upon college curricula, and stimulation of professional consciousness among personnel workers by professional associations of psychologists and administrators.

Personnel workers in many colleges were anxious for leadership and assistance from all sources. It is at this point on the historical continuum that the Council began its efforts in the college student personnel field.

ORIGINS AND SCOPE OF THE AMERICAN COUNCIL ON EDUCATION

Eleven national educational associations created the Emergency Council on Education in 1918 in order to coordinate the contributions of educational institutions and associations to the war effort, and to plan for the reconstruction period after the war. When it became evident at the close of 1918 that cooperative endeavor would be essential during peacetime also, a permanent organization was established with headquarters in Washington.

From a budget of \$20,000 and a membership of fourteen educational associations in 1920, the Council has grown to the point where, in 1953, it required an operating budget of \$450,850, exclusive of grants for special projects, in order to carry out its program for a membership of 1,097, consisting of 143 national and regional associations and 954 educational institutions. It has 26 committees and commissions working in educational areas ranging from aviation to religion. It has become a significant center of cooperation and coordination for the improvement of education at all levels, with special emphasis on higher education.

EARLY ACTIVITIES OF THE AMERICAN COUNCIL ON EDUCATION IN THE COLLEGE STUDENT PERSONNEL FIELD

Although the Council did not establish an over-all program in the student personnel field until 1924, it carried on some activities within the general area before that date. It considered the welfare of foreign students on American campuses, initiated a study of the principles that should underlie training for citizenship in colleges and universities, surveyed the purposes, organization, and services of fifteen occupational bureaus for women, and six serving both men and women.

During 1923 and 1924 the Council moved directly into the college student personnel field with considerable aid from the National Research Council. Dr. Charles R. Mann, the new director of the Ameri-

can Council on Education, became chairman of an important commission of the National Research Council concerned with writing job specifications, defining occupational terminology, and identifying the capacities of youth. Dr. Mann urged the proper matching of abilities and training, and suggested that colleges needed a cooperative study of personnel methods used in handling students, and a national center to assist in experimenting with personnel techniques and procedures.

THE CENTRAL COMMITTEE ON PERSONNEL METHODS

As a result of the active participation of Dr. Mann and Dean Hawkes in the conferences on vocational guidance sponsored by the National Research Council (1923-1925), the American Council on Education appointed the Central Committee on Personnel Methods in 1926. This committee initially undertook a survey of student personnel services and procedures in fourteen universities, which was conducted by L. B. Hopkins in 1926. It was the first organized effort on a national level to identify some of the conditions in the "frontier field" of college personnel work.

Accomplishments of various newly-formed committees included:

1. Preparation and widespread distribution of a cumulative personnel record card, with a manual of instructions for its use.
2. Stimulation of colleges to begin accurate recording of significant information about students and to adapt the Council record to meet the individual needs of their institutions.
3. Construction of objective achievement examinations for use in schools and colleges.
4. Encouragement of institutions to use these tests as models for their own experimentation.
5. Development of a proposal for a national test-making bureau.
6. Encouragement and financial support in the development of the Strong Vocational Interest Test.
7. Identification of the practices in personality measurement during the late 1920's of colleges and industries.
8. Construction of a rating scale and "description of personality."
9. Encouragement of institutions to use the rating scales experimentally.
10. Preparation of vocational monographs,
11. An experimental study of factors affecting the character development of students in two colleges.
12. Suggestions of needed studies to develop a technique for colleges to use in discovering the strongest factors operating in the personal development of their students.

In 1930, the Council received \$500,000 from the General Education

Board with which the Cooperative Test Service was established and operated for ten years. Achievement tests were constructed with the cooperation of subject-matter specialists and psychologists throughout the country. The International Business Machines Corporation was encouraged to develop the test-scoring machine which gave so much impetus to the measurement phases of student personnel work. High school and college cooperation in state testing programs was stimulated and implemented.

A College Sophomore Test Program was initiated in the spring of 1932 as a nation-wide cooperative experiment in the use of comparable achievement tests in colleges, designed to "throw light on the capacities, needs, and problems of individual students rather than to provide bases for institutional comparisons". The number of institutions participating in the College Sophomore Testing Program reached a high of 178 in 1941, with a total of 70,679 tests being utilized that year.

THE COMMITTEE ON MEASUREMENT AND GUIDANCE

In 1936, a Committee on Measurement and Guidance supplanted the Central Committee on Personnel Methods, and supervised the Cooperative Test Service until the merger, in 1948, of the testing operations of the Council, the College Entrance Examination Board, and the Carnegie Foundation for the Advancement of Teaching. During the war years the Committee issued recommendations regarding the need to take account of individual differences and guidance procedures in any programs of acceleration, and sponsored a conference on possible post-war needs in measurement and guidance. At the time of the merger which created the independent Educational Testing Service, the Council dissolved the Committee on Measurement and Guidance.

THE COMMITTEE ON STUDENT PERSONNEL WORK

In 1937 a group of college presidents, academic deans, professors, and personnel deans was convened to clarify the nature of college personnel work, and to propose needed studies and action by the Council. The report of this conference, published as *The Student Personnel Point of View*, was an authoritative and definitive statement on philosophy, objectives, and functions which gained wide acceptance throughout the country. It delimited personnel activities from other administrative and instructional functions more clearly than had any previous statement, and stressed the importance of coordinating the various types of personnel services among themselves, and with instruction and business administration. Perhaps most important of all it led to the appointment by the Council in 1937 of its Committee on Student Personnel Work.

During its fifteen-year span, the Committee on Student Personnel Work published nineteen brochures as brief and authoritative statements of important phases of a program of higher education. College staffs found them helpful in emphasizing the theory upon which certain specific personnel functions rest, describing the successful practices which some institutions were following, directing interested readers to sources of wider information, and suggesting needed administrative and research developments.

Most of the brochures were concerned with a single area, but were designed with overlap to indicate proper inter-relationships within the student personnel field. The area of counseling was given emphasis in seven bulletins—among them, educational counseling, religious counseling, and the teacher as a counselor. Two brochures considered the "socialization" of the student, broadly conceived from a cultural, community, and individual standpoint. The application of psychological tests was the central emphasis of two more brochures, while four others dealt with the application of personnel principles to housing, job placement, fraternities and sororities, and financial aids for the college student.

The problem of professional training for personnel workers was the subject of another brochure, while three more stressed functions and program in the entire student personnel field.

A second major phase of the Committee's contribution to the student personnel field was carried forward from 1946 to 1950. The Advisory Service on Student Personnel Work brought twenty-three consultants to the campuses of eighty-two colleges and universities to stimulate the thinking of the college staff, to provide relevant information and technical advice, to recommend a long-term development program, and to lay the basis for continuing evaluation.

The replies to the evaluation questionnaire submitted by the Council to the college presidents at the program's close indicated the services provided by the consultants were of significant help to most of the institutions.

OTHER COUNCIL ACTIVITIES RELATED TO STUDENT PERSONNEL

During the 1937-51 period, a number of committees, commissions, studies, and projects of the Council made definite contributions to the college personnel field. Though not carried out under any student personnel "banner," the relationships and contributions to the field were important.

The American Youth Commission was primarily concerned with secondary school and out-of-school and out-of-work youth during its activities from 1935 to 1942. During 1935-36 the medical records of

five thousand students in thirty-five colleges were analyzed, and the health facilities and services in five hundred colleges were reviewed through a questionnaire survey. The report, published in 1939, provided a general picture of illnesses suffered by students before entering college, common illnesses of students in college, and frequency of physical defects. Recommendations were made for the organization and development of college health programs.

In the field of general education the most extensive project of the Council was the Cooperative Study in General Education which functioned from 1939 to 1944. Eighteen to twenty-two colleges and universities participated. The primary purposes were to effect desirable changes in educational practice, to discover and develop leaders among the college staffs, and to exchange the results of experimentation and study.

Two projects of common interest were developed in student personnel, one of the five major fields of interest. The first was the construction for experimental use of a "self-inventory in personal-social relations", designed to identify problems arising from the student's day-to-day living that needed attention in providing for his general education. Illustrative areas of need were improvement in heterosexual adjustment, development of ability to lead small groups, and improvement in the ability to take active part in classwork. The second project concerned the development and use of an "inventory of counseling relations", designed to provide a review of the student's counseling experiences and his reactions to them. Major categories in the inventory included social relations, life-goals, vocational orientation, understanding of body functions, and ability to succeed in college. Cooperating colleges used the two inventories in counseling students, in appraising progress made, and in evaluating institutional counseling programs.

The final report of the Cooperative Study in General Education included a volume entitled *Student Personnel Services in General Education*. This volume summarized many of the institutional studies and practices, traced the development and use of the two major inventories, and outlined the psychological, physiological, philosophical, and sociological principles underlying student personnel work as conceived by the cooperating colleges.

Another project of the Council—the Cooperative Study of Evaluation in General Education—has just been concluded with a final report scheduled for completion by January 1, 1954. Nineteen colleges and universities have been evaluating programs and procedures in humanities, communications, science, social science, critical thinking, attitudes, values, and personal adjustment. Although the approach has been "curriculum-centered", the evaluation devices and ramifications of the objectives of general education developed by the intercollege committees may have

given helpful leads for student personnel workers who wish to augment ties between the classroom and "out-of-class" program.

The California Study of General Education (1950-51), carried on in fifty-seven junior colleges, was sponsored by the California State Junior College Association, the California State Department of Education, the School of Education at the University of California at Los Angeles, and the American Council on Education. Student personnel services were included in the study, and a chapter in the final report, *General Education in Action*, dealt with the advising, guidance, and counseling of students. Numerous conferences and two major summer workshops provided student personnel workers in the junior colleges with opportunity to interchange ideas and to work on specific problems among themselves, and with faculty members.

The Commission on Teacher Education sponsored from 1939 to 1942 a cooperative study of twenty colleges and universities. A central staff provided extensive field consulting services to the participating institutions. Developmental needs of prospective teachers were the prime emphasis of the study, so student personnel philosophy and implementation received particular attention. The student personnel point of view was defined as looking upon each student as a complex organism and attempting to marshal the full resources of the institution to promote his best development. This study's report, *The College and Teacher Education*, was published in 1944 and emphasized that only as personnel staff and teaching faculty shared the concern for student needs did progress toward an adequate program get under way. Special mention was made of the fact that students began to share in the development of the student personnel programs, and that this became an outstanding characteristic of the cooperative study.

The Commission on Accreditation of Service Experiences has helped to individualize the educational process through strengthening the whole concept of credit by examination. This principle of measured educational achievement, rather than time served, as the basis of credit, has become a growing factor in college selection and admissions programs, and in the educational and vocational advising of non-veterans as well as veterans. Continuing advisory assistance has been given to school and college officials in regard to the evaluation and granting of credit for service experience.

One of the volumes published by the Commission on Implications of Armed Services Educational Programs—*Utilizing Human Talent*—had special interest for student personnel workers. Implications derived from the selection and classification procedures used in the armed forces were not new, but they merited emphasis. They were particularly applicable to a more scientific approach in educational and vocational guidance.

The survey sponsored by the Council of the policies and plans of college guidance centers operating under Veterans Administration contracts provided encouraging data for personnel administrators and others working toward the further development of testing and counseling programs. Two-thirds of the institutions made the services of their guidance centers available to non-veteran students. Nearly four-fifths of the institutions reported that they intended to continue all or most of the services upon the expiration of the Veterans Administration contract.

The study of the veteran of World War II sponsored by the Council had as its focal point the special facilities and programs provided by the colleges for disabled college veterans. However, nation-wide samplings of opinions of all veterans in college were secured in regard to various aspects of their college life—classroom instruction, housing, vocational counseling, financial problems, organized student activities, and informal social and recreational activities. Some of the information received, such as the findings regarding the living expenses of college veterans, had immediate application, and these data were disseminated promptly to college presidents and personnel administrators, and to Congressional committees on veterans' affairs. The final report noted weaknesses in the postwar personnel programs of particular importance to disabled veterans, but identified also certain implications for the education of the individual student veteran and non-veteran.

THE COMMISSION ON STUDENT PERSONNEL

It is difficult to predict whether the growing professionalism of the student personnel movement will mesh with the cooperative and coordinated roles of the teacher and the personnel worker in the individualization of education. The writer feels that if the training of the subject-matter specialists, the "general education" specialist, and the student personnel specialist should become increasingly professionalized and departmentalized in the years ahead, the freshmen students enrolling in crowded colleges and universities will have little opportunity for individualized education. Recent years have brought a resurgence of concern regarding the basic values and philosophy in higher education. In a meeting sponsored by the Council, William S. Carlson, President of the State University of New York and member from 1946 to 1950 of the Committee on Student Personnel Work, raised challenging questions with personnel workers relating to the philosophy and purposes of higher education. The writer feels that rarely have personnel workers considered these values within the context of a campus operating program, a training program for professional personnel workers, or at the national level when considering philosophy or procedures through meetings of professional associations or national agencies such as the

Council. Such problems cannot be resolved within the boundaries of any professional field, but in concert with teachers, administrators, and "even students". The future role of the Council will likely be concerned with the impact of mounting enrollments and the determination of philosophy and values in higher education. In view of the past strategic role of the Council, it may well play a significant role on the national level in the future, in stimulating and assisting the student personnel profession to meet constructively these and other problems as they relate to individualization in education.

THE COUNCIL'S FUTURE IN STUDENT PERSONNEL

At present the Commission on Student Personnel is not engrossed with on-going projects and programs. The new Commission seems to be in the process of reconstructing boundaries and foundations. It plans to give consideration to the role of presidents and deans in vitalizing the campus experience, to the meaning of significant teaching, to the blending of objectives between the "liberal-general" educator, and "total development of the individual" educator, and to other projects related to the field.

Higher education has been warned to brace itself for greater problems in the years ahead. If not affected by total mobilization, the positively accelerated enrollment curve will take shape during the late 1950's. By 1957 facilities and personnel must be rapidly expanded to meet the projected enrollment of three million students. In addition to serious financial problems faced by most institutions, there is the further difficulty of finding enough trained, qualified teachers and student personnel workers. An immediately obvious demand is in the area of selection and admissions, where improved personnel procedures will be essential. With such problems, the American Council on Education has the opportunity to continue its role of leadership in student personnel work in higher education.

SPACE, FURNITURE, AND EQUIPMENT NEEDS OF SECONDARY SCHOOL CORE PROGRAMS

By ORSON WILLIAM TRUEWORTHY*

The purpose of this study is to identify the space, furniture, and equipment needs of a secondary school core program and to recommend improved practices based upon these needs. It is especially concerned with current practices in core classrooms and their significance in terms of physical facilities, not only those now in use, but those which core teachers believe they need in addition to enable them to provide adequate instruction.

Although there are several kinds of core programs, this study is limited to a sampling of core programs which involve one teacher for a length of time longer than the conventional class period in a program which cuts across subject-matter lines, emphasizes guidance and pupil-teacher planning and evaluation, and combines or replaces two or more subjects formerly required of pupils, requiring all pupils to take these "common learnings".

The sample used included different kinds of core programs, but the majority was limited to English-Social Studies or English-Social Studies in combination with one or more other subjects. More than 90 per cent of the sample was composed of this kind of program, and the grade location of 84 per cent of the core programs included was in grades 7, 8, and 9. Generally, then, the core program with which this study is concerned is a junior high school English-Social Studies core.

SOURCES OF DATA

Five hundred and forty-five secondary schools identified by the U. S. Office of Education as having a core program were asked to furnish data which were used in this study.

These data were supplemented by a study of the school furniture and equipment offered for sale by commercial manufacturers and by a field trip to Harford County, Maryland, to observe a particularly good core program in operation.

BACKGROUND OF THE STUDY

Core teaching in American secondary schools is a development of recent years. The idea is not new, but until shortly before World War II and especially during the past few years, core programs have been relatively few. The U. S. Office of Education estimated in 1950 that

* B.S. 1936, Wilson Teachers College; A.M. 1940, The George Washington University; Ed.D. conferred November 11, 1953.

only 3.5 per cent of all secondary schools could be said to have had core programs in operation.

Evidence noted in a review of related opinion and research shows that secondary schools, especially at the junior high school level, are rapidly adopting some form of core teaching. The trend is such that it is probable that within a relatively short time a majority of the secondary schools, particularly at the junior high school level, will include some kind of a core instructional program.

It is generally agreed that core instruction, if successful, differs markedly from the traditional subject-matter instruction. For one thing, reliance on textbooks as a primary resource is much more limited than in other classes and the core teacher must understand how to use effectively a much greater variety of resources in the conduct of her program. She must be able to visualize the contributions of both school and community resources to a topic much broader in scope than one concerned with a single subject-matter area. Successful core instruction is further marked by its emphasis on total pupil growth and by its recognition of teacher-pupil planning and evaluation as an effective means of motivation for meaningful learning.

Essential to the success of core instruction is adequate space, furniture, and equipment.

As core programs are relatively new and of several kinds, there is need for controlled experimentation and study to establish some of the standards needed for a proper evaluation of physical needs. To date, no such studies have been made. This is an initial study in this area and the first of several needed.

It was assumed by the researcher that teachers of core programs would experience needs which, if revealed, would aid in solving some of the problems of school administrators who are planning core programs.

With this in mind, 3,587 core teachers were queried by means of a questionnaire. Replies were received from 1,098 of them located in 343 schools in 36 states.

FINDINGS

Space does not permit a presentation of the complete findings of this study, but some of the more significant ones are listed below.

1. Although most core teaching is taking place in classrooms which are traditional in type, core teachers are almost unanimous in their view that this results in great handicaps. They strongly support the concept of a classroom especially planned for core programs.
2. One of the chief difficulties of conducting a core program in a traditional classroom is the fact that many are equipped with fixed furniture. All of the teachers queried want movable furniture.
3. Since core teaching involves the techniques of modern methodology,

it is not surprising to find that teachers desire a wide range of teaching aids. Of the 22 "most-wanted" items of furniture and equipment, nine are audio-visual aids and six are storage and display items.

Since core teachers attempt to make their instruction as functional as possible, they utilize more fully and have more need for storage space. Particularly, they ask for file cabinets, bookcases, general storage, and display cabinets. This finding may have no special significance for core programs as these types of items may be expected to find favor among all teachers. The consistent emphasis on items such as easels and models, however, suggests that there is a stronger demand than is usual among teachers of departmentalized-type curricula.

4. Activity equipment, such as handicraft work benches and science demonstration tables, are items for which teachers express a strong interest. The study contends that the content of a core curriculum is limited by the space and equipment available.* In the case of movable science demonstration tables, for example, the percentage of teachers using them is almost identical with the percentage of core programs stressing science instruction. Coupled with the strong desire of teachers for activity equipment, this may indicate that, if such equipment were available, science and handicraft would be a more prominent part of the core program.

5. Group work is an integral part of a core program, and because of this many teachers would like to have an adjoining conference room. Such a room would provide for the conduct of "quiet-type" and "active-type" activities simultaneously.

6. Items which might be classed as "miscellaneous", indicate that there is widespread interest in having a sink with running water and a raised platform for speaking and dramatic skits.

The questionnaire used to gather the data upon which the above conclusions are based also contained space in which teachers could "write in" items which were not named in the questionnaire. These needs were included by a comparatively few teachers but in some aspects they are significant. Need for some method of duplication, such as ditto, hectograph, or mimeograph, which would permit pupils to reproduce materials, was expressed by several teachers. Expendable materials, such as clay, beaver and poster board, and colored paper, were also included by several teachers.

From some of the more imaginative teachers, items such as soundproof stalls for committee work were elicited.

RECOMMENDATIONS

Obviously, provision for physical facilities will depend upon the kinds

* Teacher preparation is also a limiting factor, but this aspect of the problem is not a part of the study.

of activities and experiences which are included in the core programs being taught. If science and handicraft are included, the kinds of equipment needed will differ somewhat from those needed in other types of core programs. The following recommendations are made in terms of the most common type of core instruction, the English-Social Studies core.

For those who are planning the construction and equipping of new buildings or the remodeling of old buildings, this study reveals trends and expressed needs of core teachers for the following:

1. *In planning facilities for core programs, a reasonable interim goal involves an assumption of class size of from 21-25 pupils.*

Of the 1,025 teachers who marked this item, 51 per cent indicated that 21-25 pupils provided an optimum sized core class. Almost all teachers expressed the opinion that any number in excess of 30 pupils per class would hamper effective teaching.

In the case of core programs already in operation, responses indicate that a reduction of 10 pupils per class would bring the size of 66 per cent of the classes to the level desired by their teachers.

2. *Core classrooms should be larger than they now are. Strong support can be found in the data for an increase in room size of approximately 40 per cent.*

On the basis of 21-25 pupils per class, teachers feel that the standard-sized classroom of 22 x 32 feet (704 square feet) does not provide the space necessary for core teaching. Although there are indications of unrealistic thinking on the part of teachers reporting, it is quite apparent that most of them feel that they need much more space than they now have. Fifty-three per cent of the teachers believe they need more than 1,000 square feet per classroom of 21-25 pupils. This means that even an increase of approximately 40 per cent over the standard-sized classroom would not provide many teachers with the amount of space which they believe they need to conduct an effective core program. This increase would materially lessen the space problem, however, pending a more precise determination of space needs for core programs.

Planners of new buildings should explore the possibilities of modular construction, which features non-bearing partitions which can be moved as new space needs become evident. The higher first cost may be fully justified when based on the life-expectancy of new buildings.

Those who plan to remodel existing structures should encourage consulting architects to stress space utilization through the incorporation of cloakrooms and other alcoves into the classroom area.

3. *An adjoining conference room should be available for use by core classes.*

The specific type of room and its utilization will vary according to the kind of core instruction planned. The purpose for which it is in-

tended will determine its size and equipment. Generally, the idea of an adjoining room for committee work or handicraft work is acceptable to 73 per cent of the teachers. The questionnaire indicated a glass-partitioned room, possibly sound-treated, which would permit teacher-observation.

Planners of new buildings might consider the possibility of such a room in conjunction with two classrooms, which would provide for better utilization. The idea of committee booths in the main core room seems worthy of consideration, also.

4. *Movable seating, preferably pupil tables and chairs, should be provided.*

No teacher expressed interest in fixed pupil seating. Seventy-five per cent approved pupil tables and chairs, while approximately 50 per cent approved the universal-type desk. There was no attempt made to force a choice between the two items, which explains the total of more than 100 per cent. Some of the teachers found either type acceptable, but prefer the separate tables and chairs, possibly because a large, flat area can be made by pushing the tables together. Also, some stacking is possible with tables and chairs.

5. *Storage space which is ample and varied should be a primary consideration in planning.*

File cabinets, bookcases, general storage cabinets, paper storage cabinets, display cabinets, and magazine cabinets were all items for which 70-94 per cent of the teachers expressed a need.

Both planners of new buildings and remodelers of existing buildings must use their ingenuity to provide all types of storage space possible for core teachers. A good general rule would be to utilize all dead space for storage. Planners can depend on teachers to store something in every nook and cranny available to them. There is even something to be said for consideration of "pull-down" stairways which would lead into an attic area directly over the classroom. As ceilings are lowered in new school buildings, especially single-storied ones, such a plan may have value.

Preference for stationary storage items, rather than movable ones, was strongly indicated.

6. *Audio-visual equipment of all kinds is required in an effective core program.*

In addition to chalkboard and tack board (bulletin board), 75-99 per cent of the teachers reporting ranked wall maps, films, globes, movie projectors, phonograph records, record players, and tape, disc, or wire recorders as "most-wanted" items.

School building planners must concern themselves with the storage and maintenance of such equipment, as such items are relatively expensive and require consistent servicing if they are to retain their ef-

fectiveness. The writer believes that each room should be equipped with floor plugs and outlets which permit rapid and uncluttered setting up of movie projectors and other items. Although there was no strong preference expressed by core teachers for either separate audio-visual rooms or for equipping each core room, if these items are teaching aids they need to be readily accessible when they are needed. Improvements in projectors and daylight screens may provide pictures which can be projected successfully in rooms which are only partly darkened.

New buildings can be equipped with base plugs and speaker outlets at nominal charges if the architect and contractor are consulted early in the planning stages.

In the case of remodeling older buildings, use may be made of presently-available wheeled carts on which movie projectors or record players can be set up so they need merely to be plugged in.

7. Movable activity equipment will provide needed physical facilities for science and handicraft experiences.

Movable handicraft work benches, science demonstration tables, and work counters are items which were indicated as needed by about a third of the core teachers reporting. If science and handicraft experiences are to be included in the activities of the program, such items are essential. In an English-Social Studies type core, items of this type are desirable but not essential.

However, equipment such as work tables was consistently stressed by those who "wrote in" items and it appears that activity equipment of some type is required by a majority of teachers. The definite preference expressed for movable versus stationary items of this type suggests that architects should plan to include them in both new and remodeled buildings.

8. A sink with running water is needed in core classrooms.

Activities which include cutting and pasting, coloring, or modeling clay or similar materials require access to running water, both for execution in the media being used, and for cleaning up purposes. Over 65 per cent of the teachers indicated a need for this item. In the case of new buildings the cost of such installations may be moderate. In planning for remodeling, the location of existing plumbing may make such an addition prohibitive.

9. A bus is needed for field trips.

More than three-quarters of the teachers chose this item as a necessary one in the conduct of a core program. As the scope of projects undertaken in core classes enlarges, more contact with the community becomes desirable. It is generally agreed that properly planned field trips are of special value in the motivating of units and, in addition, they serve to acquaint the community with some of the objectives of the school.

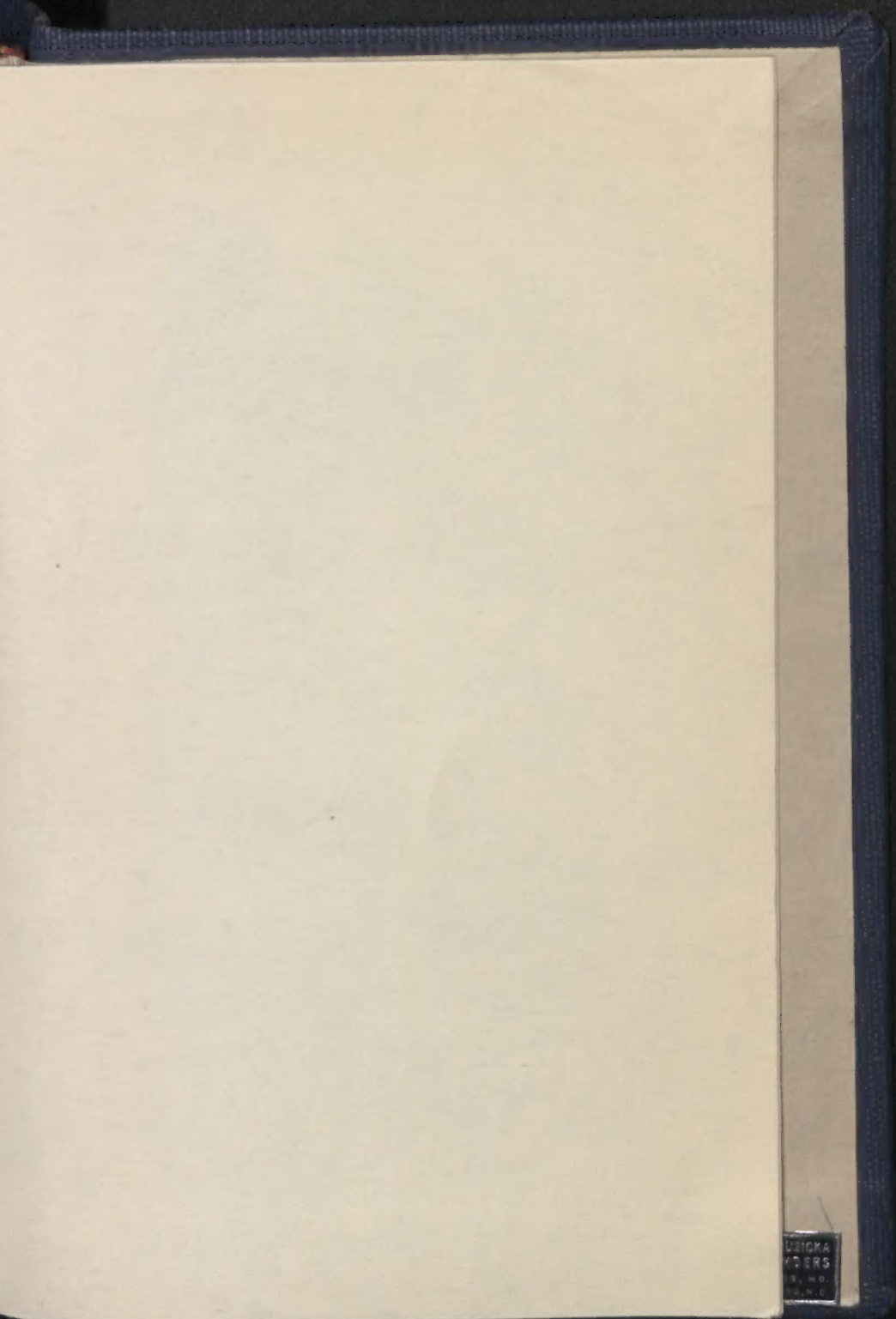
10. *An adequate book supply must be readily available to core teachers.*

Printed matter of all kinds is needed as resource material for core instruction. Textbooks, library books, scrapbooks, and unabridged dictionaries were noted by as high as 95 per cent of the teachers as items needed in core classrooms. The use of resources other than textbooks indicates that flexible library facilities need to be planned in both new and remodeled buildings. Magazines are also items which serve as resource materials and which need to be considered within the total plan. The storage of these items has been considered in other recommendations. The chief emphasis of this recommendation is budgetary, and the emphasis to be placed on purchases of book items should recognize the desirability of procuring a variety of all kinds of books, rather than many copies of a relatively few titles.

SUMMARY

This study clearly shows the need for special planning in constructing and equipping classrooms to be used in teaching the core curriculum. It further indicates the general direction that such planning should take and some of the specific items needed.

However, it does not purport to determine the exact specifications of space, furniture, and equipment needed for core program instruction. Such specifications must await more exact experimental studies done in relation to the specific kind of core program under consideration.



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